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The Asia Pacific Rim: Opportunities and Challenges to Canada

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The Asia Pacific Rim:
Opportunities and Challenges to Canada

The findings of this paper are the sole responsibility of the author.

Contents

Acknowledgments vii

Foreword ix

Abstract xi

Introduction 1

An Overview of the Economic Performance of the Asia Pacific Rim Countries 3
- Growth Record 4
- Some Possible Explanations of the Rapid Progress 7
- Savings-Investment Rates, Foreign Investment, and Trade Balances 11

Competitive Position of the Asia Pacific Rim Countries in Manufacturing 14
- Productivity and Cost Comparisons 20
- Future Prospects 25

Trade Patterns of the Asia Pacific Rim Countries 30
- Asia Pacific Rim Trade 31
  - Commodity Composition of the Asia Pacific Rim Trade 31
  - Geographic Distribution of the Asia Pacific Rim Trade 33

Canada and the Asia Pacific Rim 34
- Trade Linkages 34
  - Aggregate Picture 36
  - Canada and Japan 40
  - Canada and the Asian NICs 48
  - Canada and the Asean Countries 49
  - Canada and China 53
- Foreign Direct Investment Linkages 55
  - Investment Flows 56
- Barriers to Trade and Investment 61
  - Tariff Barriers 61
  - Nontariff Barriers 64
  - Foreign Investment Restrictions 66

Conclusions 67

Appendix A 71

Appendix B 75

Notes 91

List of Tables and Figures 95

Bibliography 99

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Foreword

The fastest growing economies of the world are those of the Asia Pacific Rim. These countries offer immense potential as a target for Canadian exports in the 21st century. This working paper, authored by Someshwar Rao, examines the past and current trends in Canada's commercial relationships with the Asia Pacific Rim countries. It also analyses the medium- to longer-term prospects for Canadian trade and investment linkages with these rapidly growing countries.

This paper concludes that the emergence of the Asia Pacific Rim as a major centre of manufacturing production offers tremendous trading opportunities for Canada. But to take advantage of these opportunities, several challenges must first be met.

Canada's success in expanding its trade with this dynamic and rapidly expanding market will depend critically on its ability to broaden its export base and to increase its share of the Asia Pacific Rim countries' imports of manufacturing products, in particular high-technology products. Canada must also restore its market shares where it traditionally has been strong – resources and resource-based manufactured products.

Canadians will continue to benefit from the high-quality and low-priced goods offered by the Pacific Rim countries. But, many of Canada's labour- and medium-technology-intensive industries will face increasingly fierce competition on both domestic and foreign markets from these countries.

This study suggests that a substantial improvement in Canada's *relative* productivity and cost performance and a gradual removal of trade protection in Canada as well as in the Asia Pacific Rim, either under the GATT framework or under bilateral trade agreements, will expand significantly the trade and investment linkages between Canada and the Asia Pacific Rim countries.

This paper was commissioned as a background study to the Council's in-depth research on Canada's international competitiveness, *Pulling Together: Productivity, Trade, and Innovation* [1992]. Someshwar Rao is a senior researcher with the Economic Council of Canada.

Judith Maxwell
Chairman

Abstract

The Asia Pacific Rim countries have attracted increasing interest among the world's industrialized nations. During the last 20 years, this corner of the globe achieved phenomenal growth in terms of output, real incomes, and exports. This study examines the trends in trade and investment flows between Canada and the Asia Pacific Rim countries and evaluates the competitive position of Canada in these markets vis-à-vis its major competitors.

Some of the main conclusions of this study are:

- Canadians will continue to benefit from the high-quality, low-priced goods offered by these countries.

- On the other hand, many of Canada's labour- and medium-technology-intensive industries face increasingly fierce competition at home and in foreign markets from the Asian NICs, the Asean countries, and China.

- The investment linkages between Canada and the Asia Pacific Rim are fairly small. The strong positive correlation between trade flows and foreign direct investment across countries strongly suggests that the weak investment links between Canada and the Asia Pacific Rim have contributed significantly to the poor Canadian trade performance in that region.

- These countries offer immense future potential as Canadian export markets because their economies are likely to continue to grow at a much faster pace than those of the industrialized countries.

- Canada's success in expanding its trade with this exploding market depends critically on its ability to diversify its manufactured exports base and increase its market share of high-technology products.

- To achieve these objectives, Canada must first substantially improve its manufacturing productivity and cost performance vis-à-vis the United States, Japan, the European Economic Community (EEC) and the Asian NICs.

- Canada must also arrest the erosion that is occurring in markets where it traditionally has been strong – resources and resource-based manufactured products. Growing competitive challenges in these areas are coming from the United States, China, Australia, New Zealand, and the Asean countries.

- A gradual removal of tariff and nontariff protection in Canada as well as in the Asia Pacific Rim countries, either under the GATT framework or under bilateral trade enhancement agreements, could increase markedly the two-way trade between Canada and the Asia Pacific Rim countries.

The Asia Pacific Rim:
Opportunities and Challenges to Canada

READER'S NOTE

The reader should note that various conventional symbols similar to those used by Statistics Canada have been used in the tables:

.. figures not available
– nil or zero.

Details may not add up to totals because of rounding.

Introduction

During the last 25 years, the economies of the Asia Pacific Rim have expanded at a much faster pace than anywhere in the world. These countries include Japan, the Asian newly industrialized countries or NICs – Hong Kong, Singapore, South Korea, and Taiwan –, several countries belonging to the Association of South East Asian Nations (the Asean countries)[1] – Malaysia, Thailand, Indonesia, and the Philippines –, and China. In turn, the remarkable growth in output and productivity of these countries has increased their per-capita real incomes at a substantially higher rate than in the United States, Canada, and other industrialized countries, and considerably narrowed their per-capita income level gaps in relation to the industrialized countries. For example, the per-capita income levels of Japan, Hong Kong, and Singapore have increased from about 25 per cent of the U.S. level in 1960 to over 70 per cent in 1985. The other Asia Pacific Rim countries have also significantly improved their relative economic standing, although their record has been less impressive compared to those of Japan, Hong Kong, and Singapore.

During the last quarter century or so, Japan and the newly industrialized countries of South East Asia have become major players in world trade of manufactured products. First Japan, and then the "Gang of Four" – Hong Kong, Singapore, Taiwan, and South Korea – have emerged as manufacturing centres. Today, the Asia Pacific Rim countries' exports, mainly manufactured exports, account for over 20 per cent of total world trade in goods, compared to just 11.5 per cent in 1972. Moreover their productivity and per-capita income levels are still low in relation to the major industrialized countries so that there exists a large potential for further "catch-up." Thus their productivity, output, real incomes, and exports and imports will likely continue to advance rapidly (see Helliwell [1988] and Rao and Magun [1990]). As a result, the shares of the Asia Pacific Rim countries in world output, trade, and foreign investment are expected to increase substantially during the next 25 years.

The manufacturing capacity of the South East Asian countries and China has also begun to grow rapidly. The People's Republic of China, a country rich in natural resources and cheap labour and with a vast domestic market, has been rapidly expanding its trade with developed countries, Japan and the Asian NICs, especially since the inauguration of its "Open Door" policy towards trade and foreign direct investment in 1978. However, the long-term impact of the Tiananmen bloodbath of 1989 on China's economic policies still remains unclear.

Recently, Japan, South Korea, and Taiwan have moved some of their production facilities of light and labour-intensive manufactured goods to the Asean countries in the form of joint ventures with the host countries.

Comparative advantage in these sorts of products has shifted to the Asean countries as large increases in relative wage costs and sharp currency appreciations have reduced the cost competitiveness of domestic production in Japan, South Korea, and Taiwan. In addition, the NICs have been rapidly closing the technology gap with North America and Europe, and these changes in their comparative advantage position are expected to accelerate the movement of their productive resources from the production of labour- and medium-technology-intensive manufactured products to high-technology manufactured products. Similarly, Japan's specialization has shifted to the production of high-technology, R&D-intensive and skill-intensive manufactured products.

The emergence of the Asia Pacific Rim as a major centre of manufacturing production and its growing importance in world trade presents Canada and other industrialized countries with tremendous opportunities as well as many challenges. The Asia Pacific Rim countries are at the centre of policy discussions about trade, technology transfer, foreign direct investment, and structural adjustment in Canada and elsewhere. Their rapid expansion provides Canada with considerable opportunities to expand and diversify its commercial relations. In addition, Canadian consumers benefit from low-priced high-quality goods offered by these countries. However, many of the labour- and medium-technology-intensive industries in Canada face increasingly fierce competition from the Asian NICs, the South East Asian countries, and China, at home as well as in third-country markets. Furthermore, the competitive challenge to Canadian high-technology, R&D-intensive, and skill-intensive manufacturing industries from Japan will continue to increase.

This study examines the past and current trends in the commercial relationships between Canada and the Asia Pacific Rim countries. It also analyses the medium- to longer-term prospects for this relationship and their implications for labour adjustment (upside as well as downside) in Canadian industries.

The following research and policy questions are examined:

- What factors explain the impressive postwar gains in exports, productivity, and real incomes of the Asia Pacific Rim countries?

- Will the South East Asian (Asean) countries and China become the next-tier NICs?

- Who are the major trading partners of the Asia Pacific Rim countries?

- How well has Canada done in penetrating into the Asia Pacific Rim market?

- Who are the main competitors to Canada in the Asia Pacific Rim market?

- Did the commodity composition of Canadian exports to and imports from the Asia Pacific Rim countries change significantly during the last 25 years or so?

- What factors account for the substantial increase in Canadian imports from the Asia Pacific Rim countries?

- What are the various barriers to trade and foreign direct investment flows between Canada and the Asia Pacific Rim countries?

- What are the medium- to longer-term prospects for Canadian trade with the Asia Pacific Rim countries?

- What can be done to enhance the trade and investment linkages between Canada and the Asia Pacific Rim countries?

The paper is organized as follows: in the second section, we provide an overview of the Asia Pacific Rim economies by comparing the main economic characteristics of these countries with those of Canada and other countries. This allows for an analysis of the main reasons for their phenomenal growth and dynamism. We analyse the recent trends in the competitive position of manufacturing in these countries in relation to Canada and the United States in the third section. In the fourth section, we examine changes in the commodity composition and the geographic distribution of exports and imports of the Asia Pacific Rim countries, disaggregated by seven major commodity groups. We discuss the recent trends in Canadian trade and investment relations with the Asia Pacific Rim countries in comparison to Canadian commercial relations with other countries in the fifth section. In this section, we also examine the trends in Canadian trade and investment performance (as measured by market shares) and investment patterns in the four groups of the Asia Pacific Rim countries relative to our major competitors in this area. In addition, we analyse the role of trade and investment barriers in Canadian commercial relations with the Asia Pacific Rim countries. In the final section, we summarize the important findings of our study and explore the medium-term outlook for Canadian trade and investment relations with the Asia Pacific Rim countries.

An Overview of the Economic Performance of the Asia Pacific Rim Countries

The Asia Pacific Rim will provide Canada with a tremendous export market potential in the 21st century because it is the most populous region on

earth and its economy is expected to be one of the fastest growing regions in the world. The population of the Asia Pacific Rim countries totalled over 1.5 billion in 1987, almost six times the size of the North American population (see Table 1).

For the purpose of discussion, most of the analysis that follows divides this region into four groups: Japan, the Asian NICs, the Asean countries, and China, each with distinct characteristics. Like Japan, the four Asian NICs have successfully overcome the problems of a relatively large overcrowded population and the lack of any significant natural resource base, and have achieved an outstanding record of economic development. However, their per-capita income levels are still substantially below the U.S. and Canadian levels. For instance, the per-capita income of Japan in 1990 was only about 81 per cent of the U.S. level, while the income of South Korea was just 38 per cent of the U.S. level in that year (see Table 2).

The four Asean nations are usually considered to be resource-rich countries, because primary products account for a greater proportion of their total gross domestic product (GDP) and exports, and the share of manufactured products is low, compared to the Asian NICs and Japan. In addition, except for Malaysia, the South East Asian countries are less dependent on international trade than the Asian NICs. For instance, the share of merchandise trade (exports plus imports) in GDP was only about 32 per cent in the Philippines, and 34 per cent in Indonesia in 1986, compared to 91 per cent in Taiwan and 67 per cent in South Korea.[2] Similarly, the per-capita income levels of the Asean countries (except Malaysia) are well below the levels of the Asian NICs (see Tables 1 and 2).

China is unique in several respects. It is by far the most populous country in the world and ranks third in terms of the area. It has become much more outward-looking in recent years, although its future orientation remains uncertain. As a result, the role of international trade in its economy has increased dramatically. For instance, international trade (exports plus imports) accounted for over 32 per cent of its GDP in 1986, compared to only 6 per cent in 1970. Although Chinese per-capita income increased at an impressive average rate of over 5 per cent per year during the period 1965-86, its per-capita income level is the lowest in the region – a mere 2.3 per cent of the Japanese level in 1986 (see Table 1).

Growth Record

The Asia Pacific Rim countries' output, productivity, real income, and trade increased dramatically in the postwar period. During the 1965-87 period, the per-capita GDP of these countries (except the Philippines) increased at a

Table 1

Main economic characteristics of the Asia Pacific Rim countries, selected years

	Population 1987	GDP per capita[1] 1987	Exports 1987	Imports 1987	Exports share in GDP 1986[2]	Imports share in GDP 1986[2]	Average annual growth rate of GDP per capita 1965-87	Share of manufacturing GDP 1965	Share of manufacturing GDP 1987
	(Million)	(US$)	(Billions of US$)			(Per cent)			
Japan	122.6	15,760	233.9	142.7	10.8	6.5	4.2	32	29
Hong Kong	5.5	8,070	49.2	48.2	92.2	92.0	6.2	24	22
Singapore	2.6	7,940	27.7	32.3	128.4	145.6	7.2	15	29
Taiwan	19.5	3,050	54.5	33.3	56.0*	45.0*	6.8	33.5**	40.9
South Korea	42.0	2,690	48.5	38.8	35.3	32.1	6.4	19	30
Malaysia	16.6	1,830	18.8	11.6	49.9	39.0	4.1	9	21
Thailand	53.5	850	11.9	12.6	21.1	22.0	3.9	14	24
Indonesia	169.7	450	18.0	8.5	19.7	14.3	4.5	8	14
Philippines	58.3	590	6.3	6.2	15.4	17.4	1.7	20	25
China	1,069.0	290	39.7	34.5	13.6	18.9	5.2	30	34
Total Asia Pacific Rim countries	1,559.3	–	508.5	368.7	–	–	–	–	–
Canada	25.9	15,160	98.1	79.5	24.8	23.4	2.7	23	19
United States	246.2	18,530	248.6	422.7	5.2	9.5	1.5	29	20

*Figures refer to 1984.

**Figures refer to 1970.

1 Based on market exchange rates.

2 Refer to only goods. They are calculated as ratios of values of exports f.o.b. and imports c.i.f. to gross domestic product (GDP).

Source: World Bank, *World Development Report* [1987 and 1989]; Statistics Canada, World Trade Data Bank; World Bank, Social Indicators, 1988; and International Monetary Fund, Supplement on Trade Statistics, no. 15, 1988.

Table 2

Real per-capita GDP level comparisons, relative to the United States, selected Asian countries,[1] selected years

	Canada	Japan	Hong Kong	Singapore	South Korea	Taiwan	Malaysia	Thailand	Indonesia
					(United States = 100)				
1950	69.5	16.7	–	–	8.7	5.2	14.7	9.8	–
1960	72.1	29.8	25.2	25.7	9.7	11.6	16.2	10.5	6.5
1970	78.2	57.6	36.3	32.3	13.2	16.0	14.6	11.4	3.2
1980	92.2	67.6	63.7	51.0	21.4	25.6	27.3	14.9	9.3
1985	93.3	72.2	70.4	70.0	27.0	27.5	25.2	14.4	9.7
1990	93.9	80.7	–	–	38.1	–	–	–	–

1 Based on PPP exchange rates.
Source Updates of Rao and Magun [1990].

substantially faster pace than in Canada and the United States, ranging from an average annual growth rate of 3.9 per cent in Thailand to 7.2 per cent in Singapore, compared to only 2.7 per cent in Canada and 1.5 per cent in the United States (see Table 1). Similarly, the economies of the Asia Pacific Rim grew at a much faster pace than the buoyant North American economies in 1988 and 1989. In addition, all the Asean countries increased the pace of their economic expansion during the 1988-89 period, compared to their relatively weak record during the 1980-87 period (see Table 2).

The merchandise exports of the Asia Pacific Rim countries increased from a mere US$31 billion in 1971 to about US$630 billion in 1989, more than a twentyfold increase. Among the Asian countries, the exports of the Asian NICs recorded the fastest growth. For instance, South Korean exports (volume), on average, increased at an annual rate of 27.2 per cent during the 1965-80 period, compared to only 5.4 per cent in Canada (see Table 3). As a result of the marked increase in their exports, the share of the Asia Pacific Rim countries in the value of world merchandise exports increased from about 11.5 per cent in 1972 to over 20 per cent in 1987 (see Figure 1 and Table 4). Similarly, their share of world exports of nonfactor services has gone up substantially in the last 20 years or so (see Hoekman and Stern [1989]). In contrast, the share of North American exports (Canada and the United States) in world merchandise exports declined from 17.8 per cent in 1972 to 14.3 per cent in 1987 (see Table 4).

Among the Asia Pacific Rim countries, the Asian NICs' market share recorded the fastest growth, increasing from 2.3 per cent in 1972 to over 6 per cent in 1987 (see Table 4). Furthermore, the Asian NICs' market was as big as the Japanese market, measured in terms of total imports (see Table 3). The four South East Asian countries accounted for only about 10 per cent of the total trade (exports and imports) of the Asia Pacific Rim countries in 1987. Similarly, China contributed about 10 per cent to the total imports of the Asia Pacific Rim in that year. But, the Chinese share of world trade and of the Asia Pacific Rim trade has been increasing at a much faster pace than the South East Asian countries' shares since 1975 (see Tables 1 and 4).

Some Possible Explanations of the Rapid Progress

What factors are responsible for the extraordinary economic achievements of the Asia Pacific Rim countries? It seems that the high savings and investment rates (in relation to GDP), the marked expansion of exports, low external debt-servicing payments, a well-educated, well-motivated, and skilled work force, flexible and dynamic factor and product markets, outward-looking and market-oriented economic development policies, and political stability have all played a part (see Kuznets [1988], Balassa [1988], and Baldwin

Table 3

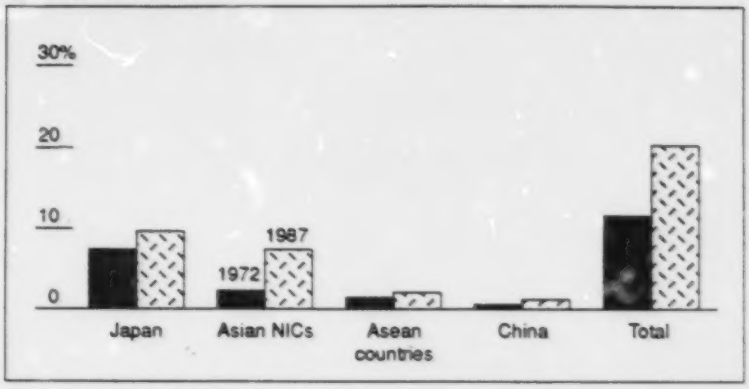
Average annual growth rate of population, output, exports and imports in the Asia Pacific Rim countries, selected years

	Growth rate of population 1965-87	Growth rate of real GDP			Terms of trade 1987 (1980 = 100)	Rate of growth of real exports		Rate of growth of real imports	
		1965-80	1980-87	1988-89		1965-80	1980-87	1965-80	1980-87
					(Per cent)				
Japan	1.0	6.3	3.8	5.4	112	11.4	5.8	4.9	3.6
Hong Kong	2.0	8.5	5.8	6.3	103	9.5	11.4	8.3	9.1
Singapore	1.5	10.4	5.4	8.0	101	4.7	6.1	7.0	3.7
Taiwan	1.6	9.2	..	6.4	107	19.0	12.7	15.1	4.3
South Korea	1.7	9.5	8.6	9.2	105	27.2	14.3	15.2	9.6
Malaysia	2.5	7.4	4.5	5.8	72	4.4	9.7	2.9	–0.7
Thailand	2.5	7.4	5.6	8.0	81	8.5	10.2	4.1	3.4
Indonesia	2.3	7.9	3.6	4.0	69	9.6	2.7	14.2	–2.2
Philippines	2.7	5.9	–0.5	4.8	98	4.7	–0.4	2.9	–4.0
China	1.8	6.4	10.4	9.0	87	5.5	11.7	7.9	14.2
Canada	1.0	4.4	2.9	3.7	101	5.4	6.3	2.6	7.3
United States	1.0	2.8	3.1	3.5	116	6.4	–0.5	5.5	9.7

Source World Bank, *World Development Report* [1989]; OECD Historical Statistics; and Wharton Econometric Forecasting Associates.

Figure 1

Market shares of Asia Pacific Rim countries in world exports of goods, 1972 and 1987



Source: International Monetary Fund.

[1988]). These factors seem to have encouraged the adoption and the diffusion of state-of-the-art technologies. Consequently, productivity and per-capita incomes improved markedly and contributed to some narrowing of the productivity and the per-capita income gaps between these countries and the major industrialized countries.

Rao and Magun [1990] attempted to empirically analyse the determinants of real per-capita income growth. Their cross-country per-capita real income regression equation for all the developing countries (including the Asian countries) strongly suggests that the remarkable growth performance of the Asia Pacific Rim countries during the 1960-86 period can be explained fairly well by three important factors: dramatic growth in exports, high savings and investment rates, and moderate population growth. However, it should be pointed out that differences in population growth rates can be attributed to differences in education and income levels across countries, because in cross-country data the rate of population growth tends to be strongly negatively correlated with these social indicators.

The regression results of Rao and Magun imply that a 10-percentage-point increase in the domestic savings rate (the ratio of domestic savings to GDP) will increase the long-term growth rate of per-capita real income by 1.2 percentage point. An expansion of exports provides an equally powerful stimulus. The findings also suggest that a 10-percentage-point increase in the growth rate of exports will raise the per-capita income growth rate by about 1.0 percentage

Table 4

Market share of the Asia Pacific Rim countries in world exports (current prices), selected years

	1972	1975	1980	1985	1987
			(Per cent)		
Japan	7.31	6.66	6.70	9.36	9.60
Hong Kong	0.87	0.72	1.01	1.59	2.00
Singapore	0.55	0.70	1.00	1.20	1.19
South Korea	0.41	0.61	0.90	1.60	1.92
Taiwan	0.50	–	–	–	2.16
Malaysia	0.43	0.45	0.67	0.81	0.74
Thailand	0.27	0.26	0.37	0.38	0.47
Indonesia	0.45	0.85	1.13	0.98	0.67
Philippines	0.27	0.27	0.30	0.24	0.23
China	0.63	0.70	0.93	1.44	1.22
Canada	5.32	4.07	3.48	4.79	4.01
United States	12.52	12.86	11.34	11.26	10.35
EEC	40.56	37.07	35.51	34.31	39.26

Source: *International Financial Statistics*, Supplement on Trade Statistics, no. 15, 1988.

point. These results are generally consistent with the conclusions of a recent International Monetary Fund (IMF) study (Otani and Villanneva [1988]), though the IMF results suggest a somewhat stronger growth stimulus from export expansion.

What is the mechanism by which an increase in exports improves per-capita income growth performance? A growth in exports can increase total factor productivity, and hence raise per-capita income levels, by fostering:

- better allocation of productive resources (capital and labour) among various sectors;
- exploitation of product and plant scale economies;
- enhanced technology diffusion and rationalization;
- relaxation of foreign exchange constraints on the imports of productivity enhancing machinery and equipment; and
- increased capacity utilization.

The importance of outward (export) orientation is reinforced by research done at the World Bank. That research strongly suggests that the economic performance of the outward-oriented economies has been broadly superior to that of the inward-looking economies in terms of growth in GDP, per-capita real income, and manufactured exports (see World Bank [1987]) during the 1963-85 period.

Savings-Investment Rates, Foreign Investment, and Trade Balances

A necessary, though not sufficient, condition for a country to raise its long-term growth potential is to increase its savings and investment rates significantly (see Solow [1957] and Otani and Villanneva [1988]). A developing country is expected to finance a large part of its increased investment in infrastructure, human and physical capital, and R&D during the early stages of its economic development through foreign borrowing. The experiences of the Asia Pacific Rim countries conform to this norm. In four out of the ten countries, the domestic investment/GDP ratio exceeded the domestic savings/GDP ratio by a substantial margin in 1967. For instance, South Korea financed nearly 50 per cent of its investment expenditure through foreign borrowing in 1965 (see Table 5). Similarly, the resource gap was fairly large in Hong Kong, Singapore, and Thailand. The domestic savings rate was equal to the investment rate in four of the other countries, while it exceeded the investment

Table 5

Savings and investment rates of the Asia Pacific Rim countries, 1965 and 1987

	1965			1987		
	(1) Gross domestic savings as a share of GDP	(2) Gross domestic investment as a share of GDP	(3)=(1)-(2) Resource gap	(1) Gross domestic savings as a share of GDP	(2) Gross domestic investment as a share of GDP	(3)=(1)-(2) Resource gap
	(Per cent)					
Japan	28.0	27.0	1.0	34.0	30.0	4.0
Hong Kong	29.0	36.0	-7.0	31.0	25.0	6.0
Singapore	10.0	22.0	-12.0	40.0	39.0	1.0
Taiwan	22.6	24.7	-2.1	38.8	19.6	19.2
South Korea	8.0	15.0	-7.0	38.0	29.0	9.0
Malaysia	24.0	20.0	4.0	37.0	23.0	14.0
Thailand	16.0	19.0	-3.0	26.0	26.0	0.0
Philippines	21.0	21.0	0.0	16.0	15.0	1.0
Indonesia	8.0	8.0	0.0	29.0	26.0	3.0
China	25.0	25.0	0.0	38.0	38.0	0.0
Canada	26.0	26.0	0.0	22.0	21.0	1.0
United States	18.0	17.0	1.0	13.0	16.0	-3.0

Source: World Bank, *World Development Report* [1989].

rate by a significant margin in Japan and Malaysia. Thus, as a whole, the Asia Pacific Rim countries financed a large proportion of their investment expenditure through foreign borrowing in the early phase of their economic development.

The gross investment rate increased considerably between the years 1967 and 1987 in eight of the ten Asia Pacific Rim countries. For instance, in Indonesia the investment rate increased from 8.0 per cent in 1965 to 26.0 per cent in 1987, and in China it jumped from 25.0 per cent to 38.0 per cent. At the same time there was an even larger increase in the gross domestic savings rate in all the countries. Consequently, the resource gap (the excess savings rate) was significantly positive in eight of the ten Asia Pacific Rim countries, ranging from 1 per cent in Singapore and Thailand to 14 per cent in Malaysia. In short, the Asia Pacific Rim countries, as a group, became large net creditors to other countries by 1987.

What factors account for the high and rising domestic savings rates in the Asia Pacific Rim countries? Data showing the distribution of domestic savings by source suggest that the role of corporate savings in total savings is small (less than 10 per cent) in Japan, Taiwan, and South Korea. The share of government savings in total savings varies from a low of 10 per cent in Japan to a high of 30 per cent in Taiwan. Hence, household or personal savings account for the bulk of total savings in these countries (see Kuznets [1988]). No data on the distribution of savings by source are available for the other countries, but it is likely that household savings are just as important there.

The high levels of personal savings in the Asia Pacific Rim countries can be largely attributed to the following factors: the occupational composition of households – a large proportion of nonfarm self-employed persons with high saving propensities; the "bonus" effect – the large proportion of transitory income in total wage income increase the savings rate because of the higher savings propensity of transitory income; limited consumer credit; absence of social security; high rates of real income growth; and a cultural proclivity to save (see Kuznets [1988]).

In summary, average savings and the investment rates are substantially higher in the Asia Pacific Rim countries than in North America. In addition, the Asia Pacific Rim countries have large excess savings, a fact reflected in their trade surplus of over US$140 billion vis-à-vis the rest of the world in 1987, much of it with the United States and Canada.

Furthermore, the drain of external debt servicing on foreign exchange earnings is negligible (under 5 per cent) in Japan, Hong Kong, Singapore, Taiwan, and Malaysia. In the other Asia Pacific Rim countries, the debt-servicing

charges are less than 20 per cent of their export earnings, fairly small in comparison to the debt-service problems of many developing countries (see Baldwin [1988]).

In summary, favourable domestic conditions in conjunction with a stable global economic environment, an expanding world economy, and freer world trade could allow the Asia Pacific Rim economies to continue to grow at a much faster pace than the industrialized countries, because their productivity and per-capita income levels are well below those in the industrialized countries, and hence would further benefit from the productivity "catch-up" bonus (see Helliwell [1988] and Rao and Magun [1990]). Consequently, their shares of world output and world trade are expected to increase substantially over the next 25 years or so. If the current trends in world trade continue into the future, the Asia Pacific Rim economies could account for close to 40 per cent of world trade by the year 2010, compared to about 20 per cent today. Much of the projected growth in the Asia Pacific Rim's share is expected to come from the Asean countries, China, South Korea, and Taiwan. Therefore, Canada's future prospects for exports and real incomes will crucially depend on its ability to penetrate into these markets, as well as its capacity to withstand the competitive challenge from these countries at home and in third-country markets, especially in manufactured-products trade.

Competitive Position of the Asia Pacific Rim Countries in Manufacturing

Manufactured exports accounted for about 88 per cent of total merchandise exports of the Asia Pacific Rim countries in 1989 (see Table 6). In Japan and the Asian NICs, manufactured exports accounted for about 99 and 90 per cent, respectively, of their total merchandise exports in 1989 (see Tables 7 and 8). The Asean countries and China have a substantially higher reliance on primary exports than Japan and the Asian NICs (see Tables 9 and 10). But, like the Asian NICs, the importance of primary exports in their total merchandise exports has declined substantially. For example, the share of primary exports in total merchandise exports of the Asean countries declined from about 78 per cent in 1971 to 56 per cent in 1989. Similarly, in China the share of primary exports declined from over 45 per cent in 1971 and 1981 to about 26 per cent in 1989.

Of course, a significant part of the decline in the share of primary exports in total merchandise exports in these countries, especially in the 1980s, could be attributed to the worldwide drop in the real price of primary products. But, a large part of the drop is also attributable to changes in the mix of world merchandise exports (volume) in favour of manufactured products, largely because of changes in consumer tastes, increased real incomes, and the

Table 6

Commodity composition of the Asia Pacific Rim countries' exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
			(Per cent)			
Commodity group						
Mineral fuels, lubricants, and related materials	3.2	11.0	4.5	15.6	33.2	14.8
Agricultural, forestry, and fish products	15.6	9.3	6.2	29.0	18.7	13.9
Resource-intensive manufactured products	17.9	13.3	9.2	11.4	9.1	12.3
Labour-intensive manufactured products	18.3	14.7	16.3	11.3	8.3	11.4
Chemicals and related products	4.9	3.6	4.5	7.3	7.3	9.0
Machinery and transportation equipment	30.6	38.5	46.6	20.1	18.4	29.2
Miscellaneous manufactured products	9.6	9.6	12.8	5.4	5.0	9.4
Total (US$ billions)	38.8	310.6	629.7	34.6	282.0	509.2

Source Estimates by the author, based on the World Trade Data Bank.

Table 7

Commodity composition of Japanese exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Commodity group						
Mineral fuels, lubricants, and related materials	0.2	0.4	0.5	19.1	48.8	25.4
Agricultural, forestry, and fish products	3.3	1.5	0.9	42.1	24.2	22.1
Resource-intensive manufactured products	22.4	17.0	9.7	7.5	5.9	12.1
Labour-intensive manufactured products	13.7	6.4	4.0	8.6	5.5	10.1
Chemicals and related products	6.2	4.4	5.3	5.6	4.8	7.0
Machinery and transportation equipment	44.2	61.1	70.1	12.5	7.1	14.4
Miscellaneous manufactured products	10.0	9.2	9.6	4.6	3.7	8.9
Total (US$ billions)	23.9	156.3	267.2	16.3	125.8	196.4

Source: Estimates by the author, based on the World Trade Data Bank.

Table 8

Commodity composition of Asian NICs' exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Commodity group						
Mineral fuels, lubricants, and related materials	6.3	8.4	3.7	16.7	24.4	9.6
Agricultural, forestry, and fish products	17.0	8.7	5.2	18.6	14.2	9.2
Resource-intensive manufactured products	10.0	11.5	8.9	11.3	10.7	11.5
Labour-intensive manufactured products	36.0	28.8	25.2	15.9	10.3	12.8
Chemicals and related products	3.1	3.0	4.4	6.8	7.3	9.2
Machinery and transportation equipment	13.3	24.3	36.2	23.6	25.9	36.8
Miscellaneous manufactured products	14.5	15.2	16.5	7.0	7.1	10.8
Total (US$ billions)	7.6	86.4	234.3	11.4	96.3	214.5

Source: Estimates by the author, based on the World Trade Data Bank.

Table 9

Commodity composition of the resource-rich (other) Asia Pacific Rim countries merchandise exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Commodity group						
Mineral fuels, lubricants, and related materials	14.4	45.9	20.8	6.9	19.9	6.2
Agricultural, forestry, and fish products	63.4	30.2	26.0	13.6	10.8	7.7
Resource-intensive manufactured products	10.9	6.6	10.7	16.3	13.3	14.1
Labour-intensive manufactured products	8.5	10.0	15.1	9.7	6.1	7.2
Chemicals and related products	0.6	0.7	2.0	10.7	12.8	12.3
Machinery and transportation equipment	0.9	4.7	19.1	37.1	32.7	46.5
Miscellaneous manufactured products	1.4	1.9	6.3	5.7	4.4	5.9
Total (US$ billions)	4.7	47.2	67.4	5.2	42.8	56.5

Source Estimates by the author, based on the World Trade Data Bank.

Table 10

Commodity composition of Chinese exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Commodity group						
Mineral fuels, lubricants, and related materials	0.9	22.5	6.8	0.3	0.6	3.4
Agricultural, forestry, and fish products	44.4	22.8	12.0	21.1	23.5	8.3
Resource-intensive manufactured products	10.5	8.8	6.2	33.9	12.5	14.6
Labour-intensive manufactured products	28.6	29.2	37.1	10.9	23.8	16.1
Chemicals and related products	5.6	6.2	4.4	15.9	11.6	12.4
Machinery and transportation equipment	3.9	3.5	13.8	16.7	23.4	36.4
Miscellaneous manufactured products	6.2	6.8	19.7	1.0	4.7	8.9
Total (US$ billions)	2.0	20.7	60.8	1.7	17.0	41.8

Source: Estimates by the author, based on the World Trade Data Bank.

growing role of intra-firm and intra-industry trade in world trade. For instance, the share of manufactured exports in total world merchandise exports (volume) has steadily increased from about 35 per cent in the 1950-65 period to over 60 per cent in the 1980s (see Rao, Tcharkari, and Lemprière [1990]).

In short, manufactured exports have played a vital role in the phenomenal growth of the Asia Pacific Rim economies' exports and their importance is expected to increase in the future. The dramatic increase in these countries' manufactured exports likely reflects their superior productivity and cost-price performance. In this section we will examine in some detail the recent trends in the competitive performance of the Asia Pacific Rim countries and explore their competitive challenge to Canada and other industrialized countries.

Productivity and Cost Comparisons

During the 1975-85 period, the manufacturing sector output expanded at a substantially faster pace in all the Asia Pacific Rim countries than in Canada and the United States, as predicted by the convergence theory. Manufacturing-output growth ranged from an average annual growth rate of 6.1 per cent in Singapore to 13.5 per cent in South Korea, compared to only 2.5 per cent in Canada. Much of this excellent performance could be attributed to the strong productivity growth in these countries (except in Thailand). Labour productivity in manufacturing, on average, increased at 5.6 per cent per year in Japan during the 1975-85 period, compared to just 2.1 per cent in Canada. Manufacturing sector productivity in Hong Kong and South Korea increased at an average annual rate of 8.3 and 10.0 per cent, respectively, during this period (see Table 11).

Nevertheless, manufacturing productivity levels in Japan and the Asian NICs remain well below the Canadian level (see Table 12). However, the rapid productivity growth rates of Japan, South Korea, and Taiwan have, over time, dramatically narrowed their productivity gaps relative to Canada. For example, the Japanese manufacturing productivity level increased from about 53 per cent of the Canadian level in 1975 to 81 per cent in 1988. And the South Korean manufacturing productivity level increased from 27 per cent of the Canadian level in 1975 to 60 per cent in 1988 (see Table 12).[3]

Although the productivity levels of the Asian NICs are still well below the Canadian and the U.S. levels, their manufactured exports remain highly cost competitive because of their very low wage costs. The hourly compensation of the Asian NICs was less than 20 per cent of the Canadian level in 1988. Consequently, their unit labour costs were only about one third of the Canadian level (see Table 12).

Table 11

Output and productivity comparisons of the Canadian and Asia Pacific Rim manufacturing sectors, 1973-88

	Average annual growth rate	
	Output growth[1]	Labour productivity growth[2]
	(Per cent)	
Japan	5.7	5.6
Hong Kong[3]	10.6	8.3
Singapore[3]	6.1	3.4
Taiwan	9.3	4.2
South Korea	13.5	10.0
Thailand[3]	7.2	0.9
Malaysia[3]	7.1	3.7
Indonesia[3]	11.2	6.4
Canada	2.5	2.1
United States	2.4	2.6
West Germany	1.3	2.5

1 Manufacturing sector GDP.
2 Manufacturing sector GDP per employed person.
3 1975-85.
Source: Estimates by the author, based on data from the Asian Productivity Organization and the U.S. Department of Labor (unpublished).

Japan has not been so fortunate. The substantial appreciation of the yen vis-à-vis the Canadian and the U.S. currencies since 1985 has resulted in a serious deterioration of the cost position of the Japanese manufacturing sector relative to its North American counterparts. In addition, average hourly compensation in Japanese manufacturing increased from around 60 per cent of the Canadian level in 1985 to about 97 per cent in 1988 (see Table 12). Consequently, Japanese unit labour costs increased from about 20 per cent below the Canadian costs in 1985 to about 20 per cent above the Canadian costs in 1988, significantly improving the cost position of Canadian manufacturers in the Japanese market.

Large exchange rate appreciations and significant increases in wage costs have also substantially increased the unit labour costs in Taiwan and South Korea relative to Canada, but at a slower pace than in Japan. For instance, Taiwanese average manufacturing hourly compensation increased from 13.3 of the Canadian level in 1985 to 19.4 per cent of the Canadian level in 1988, implying a 45-per-cent increase in its relative wage costs. Similarly, Korean hourly compensation increased from 12.0 per cent of the Canadian level in

Table 12a

Relative manufacturing labour productivity levels, Japan and the Asian NICs, selected years

	1975	1980	1985	1988
		(Canada = 100)		
Japan	52.6	66.4	73.0	81.2
Hong Kong	24.9	33.3	40.8	..
Singapore	54.5	58.5	59.1	..
South Korea	27.0	38.0	40.2	60.0
Taiwan	36.6	42.8	42.0	54.6
United States	122.8	120.9	123.4	128.3
West Germany	98.8	107.4	106.3	106.2

Table 12b

Relative hourly compensation of production workers in manufacturing, selected years

	1975	1980	1985	1988
		(Canada = 100)		
Japan	48.9	63.7	59.7	96.8
Hong Kong	13.2	17.6	16.9	17.3
Singapore	14.3	20.0	22.9	19.4
South Korea	6.6	11.8	12.0	18.4
Taiwan	6.6	11.8	13.3	19.4
United States	112.8	121.4	127.5	107.9
West Germany	94.4	131.3	83.7	121.8

Table 12c

Relative unit-labour costs levels in manufacturing, selected years

	1975	1980	1985	1988
		(Canada = 100)		
Japan	92.9	95.9	81.8	119.2
Hong Kong	53.0	52.9	41.4	..
Singapore	26.2	34.2	38.8	..
South Korea	24.4	30.7	29.9	30.7
Taiwan	18.0	27.6	31.7	35.5
United States	91.8	100.3	103.3	84.0
West Germany	95.6	122.2	78.7	114.7

Source: Estimates by the author, based on data from the U.S. Department of Labor (unpublished) and the Asian Productivity Organization.

1985 to 18.4 per cent in 1988, an increase of over 50 per cent in a period of just three years. Nevertheless, unit labour costs in both South Korea and Taiwan, on average, remained well below (between 31 and 36 per cent) the Canadian costs in 1988, because of the dramatic improvements in their relative productivity levels (see Table 12).

Japan and the Asian NICs have coped with the exchange rate induced deterioration in their cost competitiveness by adopting various strategies. First, they are maintaining their short-term price competitiveness in the North American market by substantially reducing their profit margins and/or keeping their wage growth below their North American competitors (see Yamamoto [1989]). Second, they are significantly improving their relative productivity performance by restructuring production and moving up the value-added chain. Finally, they are shifting production of some of their labour-intensive and light manufactured goods to the South East Asian countries, where average manufacturing hourly compensation is less than one third of the levels in Taiwan and South Korea, and a mere 5 per cent of the Japanese level (Bank of Japan [1988]).

In the last few years, investment by the Japanese and the Asian NICs in the South East Asian countries has increased dramatically (see Bank of Japan [1988]). For instance, Taiwanese foreign investment in Thailand surpassed the U.S. investment in that country in 1987 and ranked second after Japan. The upsurge in Thailand's foreign investment inflows continued in 1988, increasing by over 400 per cent compared to 1987 (Bank of Japan [1988]). These investments are mostly in light manufacturing industries such as textiles, shoes, and toys. Foreign direct investment and joint ventures have also skyrocketed in Malaysia, mostly from Singapore. The competitive pressures faced by Japan and the Asian NICs have fostered greater intra-Asia Pacific Rim trade as well as increased investment flows. For example, the share of Asian NICs in total Japanese imports increased from about 17 per cent in 1986 to over 20 per cent in 1988 (see Bank of Japan [1988]). In short, the exchange rate appreciation and the upward pressure on wages in Japan and the Asian NICs have considerably increased the trade and investment flows among the Asia Pacific Rim countries.

The cost and price competitiveness of the Asian NICs, the Asean countries, and China is expected to be substantially better in labour-intensive manufacturing industries such as textiles, clothing, and leather and leather products than in other manufacturing industries for the following reasons:

a) in these industries labour costs account for a large share of total industry output in North America and other industrialized countries;

b) the productivity level differences between Canada and the Asian countries in these industries are expected to be significantly lower than in other manufacturing industries; and

c) the hourly compensation in these industries was only 20 to 30 per cent of the Canadian level in 1987 (see Tables 13, 14, 15, and 16).

In summary, despite the significant appreciation of their exchange rates relative to the Canadian and the U.S. currencies, the Asian NICs are still highly cost competitive, because of their low wage costs and their various productivity-enhancing and cost-cutting strategies. The large exchange-rate appreciation and the upward pressure on wages in Japan, South Korea, and Taiwan since 1985 have increased the economic integration among them as well as the other Asia Pacific Rim countries.

Table 13a

Relative hourly compensation of production workers in selected Asian countries, total manufacturing, selected years

	1975	1980	1985	1987	1988
			(Canada = 100)		
Japan	48.9	63.7	59.7	93.3	96.9
Hong Kong	13.2	17.6	16.9	18.0	17.3
Singapore	14.3	20.0	22.9	20.2	19.4
Taiwan	6.6	11.8	13.3	18.0	19.4
South Korea	6.6	11.8	12.0	14.6	18.4
India	3.3	4.7	4.8	–	–
Canadian wage (US$)	5.79	8.37	10.81	11.97	13.60

Table 13b

Relative hourly compensation of production workers, textiles, selected years

	1975	1980	1985	1987
		(Canada = 100)		
Japan	48.6	65.7	56.1	90.0
Hong Kong	17.8	23.5	20.4	24.0
Singapore	14.0	21.6	24.5	22.0
Taiwan	7.5	12.7	16.3	24.0
South Korea	6.5	12.7	12.2	16.0
India	4.7	6.9	5.1	–
Canadian wage (US$)	4.43	6.46	8.38	9.13

Source U.S. Department of Labor (unpublished data).

Table 14a

Relative hourly compensation of production workers in selected Asian countries, apparel and other textile products, selected years

	1975	1980	1985	1987
		(Canada = 100)		
Japan	39.3	53.5	53.5	89.4
Hong Kong	18.7	27.3	27.9	32.9
Singapore	14.0	20.2	26.7	28.2
Taiwan	7.5	12.1	18.6	27.1
South Korea	5.6	12.1	14.0	17.6
India	3.7	6.1	4.7	–
Canadian compensation (US$)	4.10	5.57	6.28	6.41

Table 14b

Relative hourly compensation of production workers, leather and leather products, selected years

	1975	1980	1985	1987
		(Canada = 100)		
Japan	59.1	76.3	75.0	94.9
Hong Kong	–	–	–	–
Singapore	15.2	20.6	27.4	20.2
Taiwan	6.7	13.4	19.0	25.8
South Korea	7.6	14.4	15.5	18.0
India	4.8	7.2	4.8	–
Canadian compensation (US$)	3.91	5.77	7.61	7.93

Source: U.S. Department of Labor (unpublished data).

Future Prospects

The competitive challenge to Canadian manufacturing industries from the Asia Pacific Rim countries at home and in third-country markets is expected to increase over the medium and longer term for a number of reasons.

The Asia Pacific Rim countries, especially the Asian NICs, appear able to respond dynamically and quickly to changing market conditions. They are

Table 15a

Relative hourly compensation of production workers in selected Asian countries, primary metals, selected years

	1975	1980	1985	1987
		(Canada = 100)		
Singapore	13.4	19.2	23.2	20.2
Taiwan	7.3	13.7	12.8	19.1
South Korea	7.3	13.7	14.0	18.0
India	3.6	4.1	3.5	–
Canadian compensation (US$)	7.24	10.60	15.10	16.20

Table 15b

Relative hourly compensation of production workers, electrical and electronic equipment, selected years

	1975	1980	1985	1987
		(Canada = 100)		
Hong Kong	10.5	16.8	15.5	16.8
Singapore	12.9	17.3	22.4	18.5
Taiwan	6.5	12.6	13.5	15.5
South Korea	7.6	12.5	13.2	17.4
India	3.2	5.5	4.4	–
Canadian compensation (US$)	5.67	7.85	10.26	11.34

Source: U.S. Department of Labor (unpublished data).

expected to substantially improve their relative productivity performance and remain cost competitive by continuously moving up the value-added ladder. Over the past two decades, they have markedly changed their output and export mix in favour of higher value-added and skill-intensive products, and this process should accelerate in the future. The share of technology-intensive manufactured exports in total exports of goods has substantially increased in each of the four groups of the Asia Pacific Rim countries (see Tables 7 to 10). For example, in Japan, the share of machinery and transportation equipment exports in its total goods exports increased from 44 per cent in 1971 to 70 per cent in 1989 (see Table 7). In the Asian NICs it has increased from 13 per

Table 16

Relative hourly compensation of production workers in selected countries, motor vehicles and equipment, selected years

	1975	1980	1985	1987
		(Canada = 100)		
Japan	48.7	65.7	60.9	95.8
Brazil	13.2	19.4	13.6	–
Korea	6.6	11.9	15.2	16.6
Taiwan	9.2	16.4	13.6	19.4
United States	131.6	149.3	151.5	138.9
Canadian compensation (US$)	7.24	10.64	12.49	14.67

Source: U.S. Department of Labor.

cent in 1971 to 36 per cent in 1989 (see Table 8). The largest increase occurred in the South East Asian countries where it jumped from 0.9 per cent in 1971 to over 19.1 per cent in 1989 (see Table 9).

This process of moving up the value-added chain is expected to continue into the future, because of the rapid diffusion of frontier technologies among the Asia Pacific Rim countries (especially the Asian NICs), as their economic interdependence increases. For example, a 1988 study showed that in many production processes the technology used in Korea and Taiwan was either already equivalent to that used in Japan or would be equivalent within the next five years (see Table 17).

The technology gap between the Asean countries and the Asian NICs is fairly large, but is expected to narrow significantly during the next 10 to 15 years, in view of the increased investment and trade linkages among these two groups' countries and Japan.

On top of their increasing technical proficiency, the Asian NICs also have quite low labour costs (less than one third of the Canadian levels) in capital intensive industries such as primary metals, electrical and electronic equipment, and motor vehicles and equipment (see Tables 15 and 16). The Asian NICs are therefore likely to improve further their comparative advantage in the capital and the medium-technology-intensive industries. In doing so, they will pose a serious challenge to the viability of these industries in Canada and the other industrialized countries, including Japan, unless the industrialized countries improve their relative productivity and cost performance.

Table 17

Technological levels of Asian NICs and Asean countries

Products	Hong Kong	Singapore	Taiwan	Korea	Malaysia	Thailand	Indonesia	Philippines
Atomic energy devices	1	1	1	2	1	1	1	1
Washing machines	3	2	4	4	1	1	1	1
Refrigerators	3	3	3	4	2	2	1	2
Lighting fixtures	3	2	4	4	2	2	2	2
Communications apparatus	1	1	2	2	1	1	1	1
Transistor radio	4	3	4	4	3	3	3	3
TV sets	3	3	4	4	2	2	2	2
Computers	1	1	1	1	1	1	1	1
Electric instruments	2	2	2	2	1	1	1	1
Resistors and condensers	2	2	3	3	1	1	1	1
Semi-conductors	3	2	3	3	1	1	1	1
Batteries	4	–	3	4	3	3	3	3
Automobiles	1	1	1	3	1	1	1	1
Buses and vans	1	1	2	3	1	1	1	2
Automobile parts	1	1	2	3	1	2	1	2
Motorbicycles	–	–	3	–	1	1	1	1
Bicycles	–	–	3	3	–	1	–	–
Rolling stocks	1	1	3	3	1	1	1	1
Ships	1	3	3	3	1	1	1	1
Airplanes	–	–	1	1	–	–	–	–
Cameras	3	2	3	2	2	2	2	2
Boilers	1	1	1	2	1	1	1	1
Power shovels	1	1	2	2	1	1	1	1

| | | |

As the Asian NICs move to the production of capital and medium-technology-intensive products, the South East Asian countries and China are expected to improve their competitive and comparative advantage positions in labour-intensive and light manufactured products. They could then substantially increase their share of these products in world trade during the next 25 years or so.

In summary, the competitive challenge to Canada and the other industrialized countries from the Asia Pacific Rim countries is expected to increase in the future. Canada will face fierce competition from Japan and the Asian NICs in technology and skill-intensive manufactured products. China and the Asean countries are expected to produce and export many of the labour-intensive and light manufactured goods currently supplied to North America largely by the Asian NICs.

Trade Patterns of the Asia Pacific Rim Countries

The current trade relations among Japan, the Asian NICs, the Asean countries, and China are complex in structure, consisting of both competitive and complementary aspects. For instance, both Japan and the Asian NICs compete for the medium-technology and the capital-intensive product markets in Europe and North America. They have relatively few natural resources and hence a very large share of their domestic demand for agricultural, forestry, and fish products, raw materials, and resource-intensive manufactured products is met by imports from the resource-rich developed countries such as Canada, the United States, Australia, and New Zealand, or by imports from the Middle East countries, the South East Asian countries, and China. On the other hand, Japan imports a growing share of its labour-intensive and light manufactured products from the Asian NICs and exports sophisticated machinery and equipment to them. The Asean countries and China export primary products and resources and labour-intensive manufactured goods to the Asian NICs and Japan. In return, these countries import from them capital and medium- to high-technology-intensive manufactured products. The Asean countries, China, and the Asian NICs all compete for the market of light manufactured goods in Japan and in other industrial countries.

As discussed in the last section, the substantial appreciation of the Japanese yen and the Asian NICs' currencies, and the upward pressure on their domestic wage costs have contributed significantly to the increased economic integration among the Asia Pacific Rim countries in recent years, as reflected by increased joint ventures, growing foreign direct investment flows, and increasing intra-Pacific Rim trade. It is clear, then, that the current commercial relations among the Asia Pacific Rim nations reflect the basic economic differences among the four groups of countries, such as the varying levels of

industrialization, the natural resource endowment, and the size of the domestic market.

The objective of this section is to examine trends in the commodity composition and the geographic distribution of exports and imports of the four groups of the Asia Pacific Rim countries, and the growth in intra-Asia Pacific Rim trade, disaggregated by seven major commodity groups. The data source for our analysis is the new World Trade Data Base developed by Statistics Canada.

Asia Pacific Rim Trade

The Asia Pacific Rim countries' merchandise exports and imports have increased dramatically during the last 20 years or so. Exports increased from a mere US$39 billion in 1971 to US$311 billion in 1981 and to about US$630 billion in 1989. Similarly, their imports also increased markedly, but at a significantly slower pace than their exports. Consequently, the Asia Pacific Rim countries, as a group, have steadily improved their trade balance from a surplus of US$3.5 billion in 1971 to US$28.6 billion in 1981 and to over US$120.5 billion in 1989 (see Table 18).

The steady increase in the trade surplus of the Asia Pacific Rim countries largely reflects the phenomenal growth in their share of world merchandise exports, due to their strong competitive strength in manufactured exports. The other important factors include their high domestic savings rates in relation to their investment needs, the increased demand for foreign savings in the United States in the 1980s, the rise in the price of manufactured products relative to the price of primary exports in world trade, and the shifts in the mix of their manufactured exports towards higher value-added products.

Commodity Composition of the Asia Pacific Rim Trade

The commodity composition of the Asia Pacific Rim countries' exports and imports changed substantially during the last 20 years or so, largely reflecting the process of industrialization and economic development in these countries (see Tables 6 to 10). The share of primary exports in their total exports of goods declined from about 19 per cent in 1971 to less than 11 per cent in 1989. Similarly, the share of resource-intensive manufactured exports in total exports declined from about 18 per cent in 1971 to 9 per cent in 1989. On the other hand, the share of technology-intensive and higher value-added products (machinery and transportation equipment, and chemicals and related products) in their total exports steadily increased from about 36 per cent in 1971 to 43 per cent in 1981 and over 52 per cent in 1989 (see Table 6). The

Table 18

Export/import ratios and trade balance of the Asia Pacific Rim countries by major commodity group, selected years

	Export/import ratios			Trade balance		
	1971	1981	1989	1971	1981	1989
	(Per cent)			(Billions of US$)		
Commodity group						
Mineral fuels, lubricants, and related materials	0.23	0.37	0.37	–4.7	–59.4	–47.3
Agricultural, forestry, and fish products	0.59	0.55	0.55	–4.10	–23.9	–31.6
Resource-intensive manufactured products	1.73	1.62	0.92	2.9	15.8	–4.9
Labour-intensive manufactured products	1.78	1.95	1.77	3.1	22.2	44.4
Chemicals and related products	0.74	0.54	0.62	–0.7	–9.4	–17.1
Machinery and transportation equipment	1.68	2.30	1.97	4.7	67.6	144.4
Miscellaneous manufactured products	1.97	2.10	1.69	1.8	15.7	32.7
Total	1.10	1.10	1.24	3.5	28.6	120.5

Source: Estimates by the author, based on the World Trade Data Bank.

increased importance of higher value-added products in the Asia Pacific Rim countries' exports reflect significant changes in their comparative advantage position during the last 20 years, brought on by substantial accumulation of physical and human capital.[4]

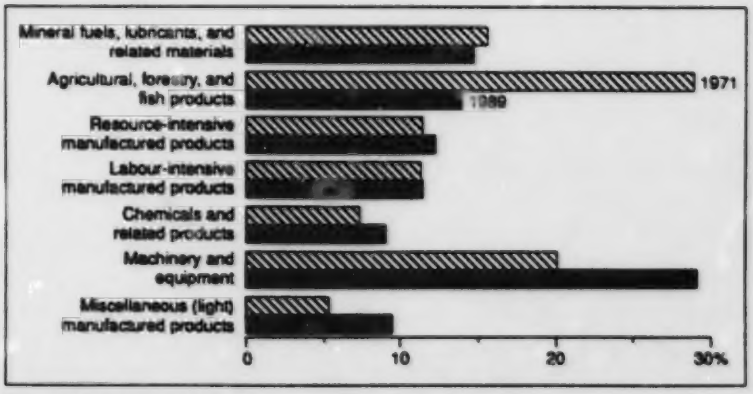
Primary products and resource-based manufactured imports, not surprisingly, accounted for about 29 per cent of the total imports of the Asia Pacific Rim countries in 1989, reflecting the absence of any natural resource endowment in Japan and the Asian NICs. However, like exports, the share of technology-intensive manufactured imports in their total imports has steadily increased (see Figure 2). This reflects the increased importance of machinery and equipment imports from the United States and other industrialized countries in the economic development of the Asian NICs, the Asean countries, and China, and the growing share of intra-Asia Pacific Rim trade in high-tech products. For example, the share of intra-Asia Pacific Rim exports in the total high-tech exports of these countries was over 62 per cent in 1989, compared to only 32 per cent in 1971.[5]

Geographic Distribution of the Asia Pacific Rim Trade

Canadian (2.4 per cent) and U.S. (31.1 per cent) imports accounted for 33.5 per cent of total exports of the Asia Pacific Rim countries in 1989, compared to 25.8 per cent in 1981 (see Table 19). The strong growth in North

Figure 2

Commodity composition of Asia Pacific Rim countries' imports, 1971 and 1989



Source Estimates by the author.

American final domestic demand relative to other countries, the large depreciation of the Asia Pacific Rim countries' currencies in relation to their North American counterparts during the 1981-85 period, and the poor economic performance of the Latin American, Middle Eastern, and other developing countries in the 1980s could explain the increased penetration of the Asia Pacific Rim countries into the North American market.

There have also been large shifts in the regional distribution of the Asia Pacific Rim countries' imports over the last ten years, mainly as a result of changes in the commodity composition of their import demand. For instance, the share of mineral fuels, lubricants, and related materials in total imports of the Asia Pacific Rim declined from 33 per cent in 1981 to about 15 per cent in 1989 (see Table 6), as the relative price of oil and gas fell and as energy consumption/GDP ratios in these countries declined. The declining role of oil and gas imports in their total imports and the increased importance of intra-Asia Pacific Rim trade have been the chief contributors to the reduction in the share of the rest of the world countries, mostly the Middle Eastern countries, in total imports of the Asia Pacific Rim countries during the 1981-89 period. For example, it declined from 34 per cent in 1981 to 19 per cent in 1989. Canada (2.4 per cent) and the United States (19.5 per cent) supplied only 21.9 per cent of the total Asia Pacific Rim countries' imports in 1989, compared to their 33.5 per cent share in total exports of the Asia countries in that year (see Figure 3 and Table 19). Similar changes occurred in the trade pattern of all four groups of the Asia Pacific Rim countries (see Tables B-1 to B-14 in Appendix B).

The share of intra-Asia Pacific Rim trade in total imports of the Asia Pacific Rim countries steadily increased from 33 per cent in 1971 to 48 per cent in 1989. Japanese and Asian NICs' purchases accounted for about 70 per cent of the total intra-Asia Pacific Rim trade in 1989 (see Table 19). This increase can be attributed to three factors: 1) the phenomenal rise in the shares of the Asia Pacific Rim countries in world trade and in world output; 2) the complementary nature of trade among the Asian countries; and 3) the growing investment and financial linkages among them.

Canada and the Asia Pacific Rim

Trade Linkages

In the previous section, we examined the trends in the commodity and geographic distribution of merchandise exports and imports of the Asia Pacific Rim countries. The main conclusions of this analysis are: the importance of manufactured goods in total exports as well as imports has increased substantially during the last 20 years or so in each of the four groups of the Asia

Table 19

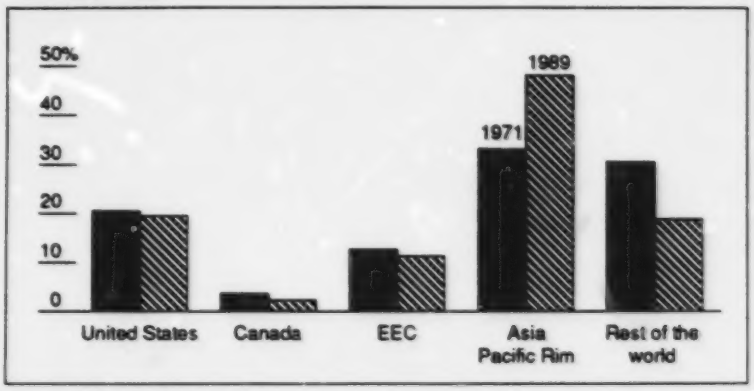
Regional distribution of the Asia Pacific Rim countries' exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Canada	3.0	1.8	2.4	3.6	2.4	2.4
United States	29.5	24.0	31.1	20.5	18.5	19.5
EEC	12.9	13.1	14.7	12.6	8.2	11.3
Asia Pacific Rim countries	29.8	33.7	38.8	32.9	37.4	47.9
Japan	7.1	10.2	9.7	15.8	13.5	14.8
Asian NICs	14.1	14.2	19.3	6.6	10.0	18.3
Other Asia Pacific Rim countries	6.9	6.8	5.3	7.3	9.4	7.3
China	1.7	2.5	4.5	3.2	4.5	7.5
Rest of the world	24.7	27.2	13.0	30.3	33.8	18.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Estimates by the Economic Council of Canada, based on the World Trade Data Bank.

Figure 3

Regional distribution of Asia Pacific Rim countries' imports, 1971 and 1989



Source Estimates by the author.

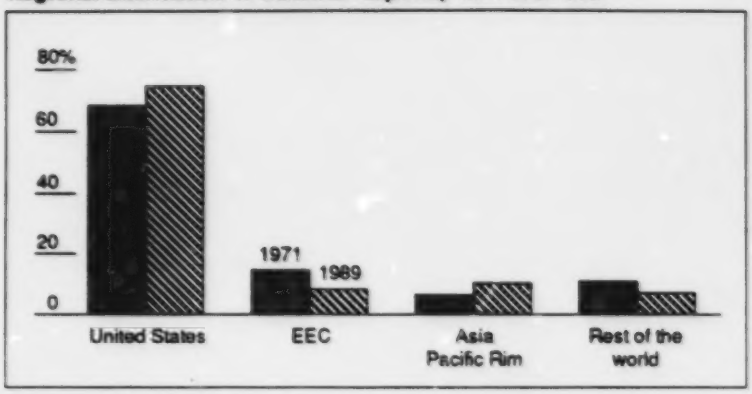
Pacific Rim countries; within the manufactured products group, the share of technology-intensive trade has increased considerably; and the role of intra-Asia Pacific Rim trade, especially in imports, has increased significantly in each group.

In this section, we analyse the trends in trade flows between Canada and the Asia Pacific Rim countries. In addition, we examine Canada's trade performance in the Asia Pacific Rim countries, disaggregated by the seven major commodity groups. We also analyse the recent trends in foreign direct investment flows between Canada and the Asian countries. Finally, we discuss some of the main barriers to trade and direct investment flows between these countries and Canada and examine their implications for Canada's commercial relations with the Asian countries.

Aggregate Picture

The importance of the Asia Pacific Rim market for Canadian exports has increased significantly during the last two decades. Their share in total Canadian exports increased from 6.7 per cent in 1971 to 8.9 per cent in 1981 and 9.4 per cent in 1989 (see Figure 4 and Table 20). The penetration of imports from the Asia Pacific Rim into Canada was more dramatic, increasing from 7.1 per cent in 1971 to 9.1 per cent in 1981 and to nearly 15 per cent in 1989 (see Figure 5 and Table 20).

Figure 4
Regional distribution of Canadian exports, 1971 and 1989



Source Estimates by the author.

The substantial increase in the U.S. share of Canadian exports during the 1980s could be explained by four factors: a large increase in U.S. final domestic demand; Canada's improved cost position vis-à-vis the United States; worsened cost position in relation to the Asia Pacific Rim countries, which encouraged a greater focus on the U.S. market; and sluggish growth in the Asean countries.

The large improvement in the competitive position of the Asia Pacific Rim countries vis-à-vis the United States and Canada in the 1980-85 period, on the other hand, explains the sharp increase in the shares of the Asia Pacific Rim countries in Canadian imports during the 1980s.

The strong surge in imports from the Asia Pacific Rim countries was fairly uniformly distributed across all the major commodity groups – i.e., shares of all seven groups doubled between 1971 and 1989, with the exception of resource-based manufactured products (see Table 21). The increase in their aggregate share of the Canadian market during this period was entirely due to this broad-based increase in their shares of the major commodity groups. Changes in the commodity composition of Canadian imports did not contribute to the growth in the aggregate share of the Asia Pacific Rim countries.[6] On the other hand, the large increase in the importance of machinery and equipment imports in the Asia Pacific Rim countries' imports – in combination with a very small and declining Canadian share of these products – largely contributed to the drop in the Canadian share of the Asia Pacific Rim market between 1971 and 1989 (see Figure 6).

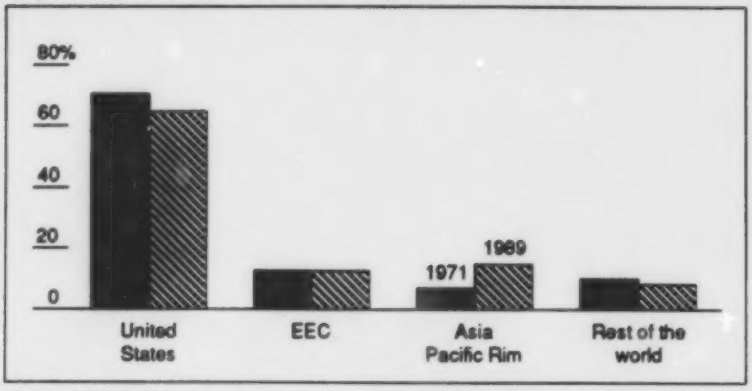
Table 20

Regional distribution of Canadian exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
United States	68.4	65.0	74.4	70.5	71.0	64.5
EEC	14.5	11.1	8.3	12.4	8.8	12.5
Japan	4.6	5.7	6.4	5.4	5.6	7.1
Hong Kong	0.1	0.2	0.3	0.6	0.9	1.4
Singapore	0.1	0.2	0.2	0.1	0.3	0.3
Taiwan	0.1	0.3	0.7	0.5	1.0	2.0
South Korea	0.2	0.6	1.1	0.2	0.8	2.0
Malaysia	0.1	0.2	0.1	0.2	0.1	0.3
Indonesia	0.0	0.1	0.3	0.0	0.0	0.3
Thailand	0.1	0.2	0.3	0.0	0.0	0.2
Philippines	0.2	0.1	0.1	0.0	0.1	0.1
China	1.2	1.3	0.8	0.1	0.3	1.0
Rest of the world	10.4	11.1	7.0	10.0	10.9	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Estimates by the author, based on the World Trade Data Bank.

Figure 5
Regional distribution of Canadian imports, 1971 and 1989



Source Estimates by the author.

Resources and resource-based manufactured products accounted for about 82 per cent of Canadian exports to the Asia Pacific Rim countries in 1987, compared to their share of only 49 per cent (in 1989) in total Canadian exports (see Tables 22 and 23). In sharp contrast to the commodity composition of Canada's exports, nonresource-based manufactured products accounted for close to 90 per cent of Canadian imports from these countries in 1987, and the shared technology-intensive imports' share was about 60 per cent (see Tables 22 and 24).

The commodity composition of Canadian exports to and imports from the Asia Pacific Rim countries is consistent with its comparative advantage position in relation to these countries. Canada has a significant comparative advantage in resources and resource-based products, and chemicals and related products vis-à-vis the Asia Pacific Rim countries.[7] On the other hand, the Asia Pacific Rim countries, on average, have a strong comparative advantage in machinery and transportation equipment and in labour-intensive and light manufactured products (see Table 25).[8]

The strong surge in Canadian final domestic demand during the 1980s, the shift in Canadian imports towards higher value-added products, the decline in the price of resources and resource-based products relative to other manufactured products (terms-of-trade deterioration), and the deterioration in Canada's competitive position vis-à-vis the Asian countries have resulted in a sharp deterioration in Canada's trade balance with the Asia Pacific Rim countries during the 1981-89 period. It changed from a surplus of US$1 billion

Table 21

Asia Pacific Rim countries' share in Canadian imports, selected years

Commodity group	1971	1981	1989
		(Per cent)	
Mineral fuels, lubricants, and related materials	0.0	0.0	0.6
Agricultural, forestry, and fish products	3.9	5.6	9.0
Resource-intensive manufactured products	14.4	10.9	10.6
Labour-intensive manufactured products	21.8	28.9	40.6
Chemicals and related products	2.1	2.4	3.8
Machinery and transportation equipment	5.3	8.6	14.5
Miscellaneous manufactured products	9.7	14.3	21.4
Total	7.1	9.1	14.6

Source: Estimates by the author, based on the World Trade Data Bank.

in 1981 to a deficit of around US$2.0 billion in 1987 and US$3 billion in 1989 (see Tables 25 and 26).

Canada and Japan

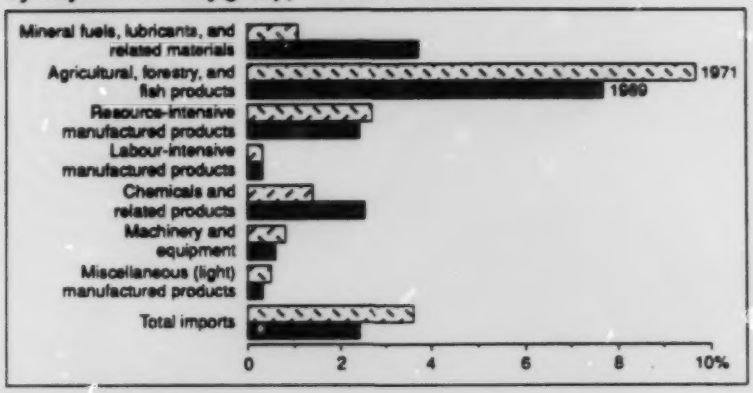
Canadian trade with Japan increased from a mere US$1.7 billion in 1971 to nearly US$15 billion in 1989. Japan accounted for over 60 per cent of all Canadian merchandise exports to the Asia Pacific Rim countries in 1989. Similarly, Canadian imports from Japan were almost 50 per cent of its total imports from the region in that year. However, Canada's trade with Japan has not grown as quickly as that with the other Asia Pacific Rim countries, especially the Asian NICs and China (see Table 20).

Agricultural, forestry, and fish products; mineral fuels, lubricants, and related materials; and resource-intensive manufactured products accounted for about 91 per cent of Canadian exports to Japan in 1987 (see Table 23). The top ten Canadian exports to Japan in that year were: coal, lignite and peat; pulp and waste paper; wood; ores and concentrates of base metals not elsewhere specified; oil seeds; wheat; fish, fresh, chilled, or frozen; fish, crustaceans; meat; and paper and paperboard. These ten products accounted for about 70 per cent of total Canadian exports to Japan.

In sharp contrast, close to 90 per cent of all Canadian imports from Japan were technology-intensive and light manufactured products (see Table 24).

Figure 6

Canadian share of the Asia Pacific Rim countries' imports by major commodity group, 1971 and 1989



Source: Estimates by the author.

Passenger motor cars, telecommunications equipment, trucks, internal combustion piston engines and parts, motor vehicle parts and accessories, photographic apparatus and equipment, machine tools, household electrical and non-electrical equipment, automatic data processing machines, and radio broadcast receivers accounted for over 65 per cent of total Canadian imports from Japan.

The Japanese share of total Canadian exports increased from 4.6 per cent in 1971 to 5.7 per cent in 1981. After 1981, the Japanese share increased at a slower pace due to a variety of factors (see Table 20). These include the large appreciation of the Canadian dollar against the Japanese yen, the buoyancy of U.S. final domestic demand, the improved competitive position of Canadian manufacturers in the U.S. market during the 1980-85 period, especially in automobiles (see Rao, Tcharkari, and Lemprière [1990]), and the decline in the real price of resources and resource-based products. These same factors contributed to the increased penetration of Japanese imports into the Canadian market. The Japanese share of total Canadian imports increased from 5.6 per cent in 1981 to 7.1 per cent in 1989 (see Table 20).

Canada's trade performance in the Japanese market can be best judged by examining the recent trends in the Canadian share of that market, disaggregated by the seven major commodity groups. If we analyse its trade performance from this perspective, then it is apparent that Canada has not done well. For instance, its overall share declined from 5.4 per cent in 1971 to 3.8 per cent in 1989 (see Table 27).

Table 22

Commodity composition of Canadian merchandise exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Commodity group						
Mineral fuels, lubricants, and related materials	7.2	14.7	13.1	6.6	9.1	6.4
Agricultural, forestry, and fish products	31.8	28.6	19.6	11.4	10.4	6.2
Resource-intensive manufactured products	18.9	16.6	16.3	10.6	10.4	9.4
Labour-intensive manufactured products	1.7	2.0	1.8	7.7	6.0	6.5
Chemicals and related products	3.3	5.8	5.3	5.4	5.9	6.1
Machinery and transportation equipment	33.9	29.3	39.9	49.9	49.5	55.3
Miscellaneous manufactured products	3.2	3.0	4.0	8.4	8.7	10.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total (US$ billions)	19.0	75.7	116.8	15.6	61.9	102.7

Source: Estimates by the author, based on the World Trade Data Bank.

Table 23

Commodity composition of Canadian exports to the Asia Pacific Rim countries, 1987

	Mineral fuels, lubricants, and related materials	Agricultural, forestry, and fish products	Resource-intensive manufactured products	Labour-intensive manufactured products	Chemicals and related products	Machinery and transportation equipment	Miscellaneous manufactured products	Total
				(Per cent)				
Japan	18.7	65.2	7.0	0.8	4.6	2.5	1.3	100.0
Hong Kong	3.4	21.7	28.0	8.1	16.2	16.7	5.9	100.0
Singapore	0.0	12.8	28.5	10.5	12.3	31.0	4.9	100.0
Taiwan	7.6	43.3	21.5	0.7	20.5	5.6	0.8	100.0
South Korea	18.8	47.5	6.8	4.0	14.0	6.3	0.6	100.0
Malaysia	0.0	24.9	25.3	4.8	31.0	13.3	0.8	100.0
Indonesia	0.0	54.4	8.8	2.2	14.5	18.9	1.4	100.0
Thailand	0.0	40.1	29.8	2.8	12.9	13.8	0.6	100.0
Philippines	0.1	52.3	13.8	4.4	22.3	5.9	1.0	100.0
China	0.0	68.1	6.6	1.9	16.3	6.5	0.7	100.0
Asia Pacific Rim countries	13.6	58.8	9.8	1.8	9.4	5.3	1.3	100.0
World	10.2	24.3	15.7	2.1	5.1	38.8	3.8	100.0

Source: Estimates by the author, based on the World Trade Data Bank.

Table 24

Commodity composition of Canadian imports from the Asia Pacific Rim countries, 1987

	Mineral fuels, lubricants, and related materials	Agricultural, forestry, and fish products	Resource-intensive manufactured products	Labour-intensive manufactured products	Chemicals and related products	Machinery and transportation equipment	Miscellaneous manufactured products	Total
				(Per cent)				
Japan	0.0	1.3	5.6	4.2	2.3	77.6	9.0	100.0
Hong Kong	0.0	6.3	3.3	45.6	0.9	15.2	28.7	100.0
Singapore	0.0	12.7	3.2	17.2	4.4	53.9	8.7	100.0
Taiwan	0.0	0.9	12.1	28.7	1.1	32.6	24.7	100.0
South Korea	0.6	1.2	9.8	42.0	1.3	33.1	11.9	100.0
Malaysia	0.0	35.2	7.0	33.2	1.4	20.3	3.0	100.0
Indonesia	0.0	45.4	23.8	27.3	0.4	0.2	2.9	100.0
Thailand	0.0	48.6	3.3	34.2	0.4	3.6	9.9	100.0
Philippines	0.0	25.7	5.1	54.7	0.5	2.6	11.5	100.0
China	0.0	14.3	4.6	60.8	2.1	3.0	15.3	100.0
Asia Pacific Rim countries	0.0	4.5	7.0	21.2	1.8	51.8	13.7	100.0
World	4.7	8.3	8.4	7.0	5.9	56.6	9.2	100.0

Source: Estimates by the author, based on the World Trade Data Bank.

Table 25

Export/import ratios and trade balance of Canadian trade with the Asia Pacific Rim countries by major commodity group, selected years

Commodity group	Export/import ratios			Trade balance		
	1971	1981	1989	1971	1981	1989
	(Per cent)			(Billions of US$)		
Mineral fuels, lubricants, and related materials	..	..	71.60	+0.06	+0.87	2.76
Agricultural, forestry, and fish products	13.89	11.63	9.40	+0.90	3.84	4.87
Resource-intensive manufactured products	0.44	0.92	1.40	–0.14	–0.06	0.45
Labour-intensive manufactured products	0.05	0.14	0.10	–0.25	–0.92	–2.52
Chemicals and related products	2.06	5.18	4.70	+0.02	+0.37	0.88
Machinery and transportation equipment	0.14	0.10	0.11	–0.35	–2.40	–7.36
Miscellaneous manufactured products	0.08	0.08	0.08	–0.12	–0.71	–2.00
Total	1.11	1.18	0.80	0.12	1.00	–2.96

Source: Estimates by the author, based on the World Trade Data Bank.

Table 26

Canadian trade balance with the Asia Pacific Rim countries, selected years

	1971	1981	1987
		(Billions of US$)	
Japan	0.03	0.88	–0.23
Hong Kong	–0.07	–0.36	–0.77
Singapore	–0.01	–0.06	–0.08
Taiwan	–0.06	–0.37	–0.92
South Korea	+0.01	–0.08	–0.53
Malaysia	–0.03	0.05	–0.05
Indonesia	0.01	0.06	0.10
Thailand	0.01	0.10	0.00
Philippines	0.03	–0.00	0.02
China	0.20	0.78	0.57
Asia Pacific Rim countries	0.12	0.99	–1.90
United States	2.05	5.25	22.85
EEC	0.85	2.99	–2.86
Rest of the world	0.43	4.62	0.52
Total	3.45	13.85	18.61

Source Estimates by the author, based on the World Trade Data Bank.

This weak trade performance is pervasive across all the seven major commodity groups (except mineral fuels, lubricants, and related materials). More importantly, the Canadian share of Japanese machinery and transportation equipment imports, a rapidly growing component of Japanese imports, declined from 0.8 per cent in 1981 to 0.6 per cent in 1989, compared to 43 per cent for the United States, 28 per cent for the EEC countries, and 20 per cent for the Asian NICs (see Table 27, and Table B-3 in Appendix B). This suggests that the fall in Canada's share of the Japanese market can be explained in large part by the increased importance of nonresource-based manufactured products (especially technology-intensive products) in Japanese imports, and the inability of Canadian manufacturers to broaden their manufactured-exports base and increase their share of such imports. And in fact, 70 per cent of the fall in the aggregate Canadian share of Japanese imports between 1971 and 1989 can be explained by these factors.[9]

These results imply that future Canadian trade performance in the Japanese market depends critically on the development of a broader manufactured-exports base and a significantly increased share of the Japanese technology-

Table 27

Canadian share of Japanese exports and imports by major commodity group, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Commodity group						
Mineral fuels, lubricants, and related materials	0.0	0.0	1.4	1.9	1.2	4.4
Agricultural, forestry, and fish products	3.0	3.5	2.2	10.2	9.8	9.3
Resource-intensive manufactured products	3.5	1.9	1.6	5.2	4.0	2.6
Labour-intensive manufactured products	4.0	1.7	2.5	0.5	0.7	0.2
Chemicals and related products	1.0	1.0	0.9	2.7	3.2	2.4
Machinery and transportation equipment	3.8	2.4	3.0	0.8	0.8	0.6
Miscellaneous manufactured products	3.8	2.6	2.7	0.9	0.5	0.5
Total	3.5	2.2	2.7	5.4	3.5	3.8
Total Japanese trade with Canada (US$ billions)	0.9	3.5	7.3	0.9	4.4	7.5

Source: Estimates by the author, based on the World Trade Data Bank.

intensive imports. In addition, Canada will have to withstand the growing competitive challenge from the United States, Australia, New Zealand, the Asean countries, and China to supply resources and resource-based products to the Japanese market, and maintain and/or increase its share of these products.

Canada and the Asian NICs

Canadian exports to the Asian NICs (Hong Kong, Singapore, Taiwan, and South Korea) increased from a mere US$0.1 billion in 1971 to close to US$3.7 billion in 1989, almost a fortyfold increase. Similarly, the importance of the Asian NICs to Canadian exporters increased markedly during this period, rising from 0.5 per cent in 1971 to 2.3 per cent in 1989. In the same period, imports from the Asian NICs rose from 1.4 to 5.7 per cent of total Canadian imports (see Table 20).

Over 75 per cent of Canadian exports to the Asian NICs in 1989 were accounted for by South Korea (48 per cent) and Taiwan (29 per cent). As with Japan, resources and resource-based manufactured products dominate Canadian exports to these countries. For instance, the shares of these products in total Canadian exports to South Korea and Taiwan were about 75 per cent in that year (see Table 23). The top ten Canadian exports to South Korea were: coal, lignite and peat; pulp and waste paper; wheat; sulphur and unroasted iron pyrites; telecommunications equipment; aluminium; fertilizers; ores and concentrates of base metals, not elsewhere specified; hides and skins (raw), and alcohol (phenols). These ten products accounted for close to 75 per cent of Canadian exports to South Korea in 1987. Similarly, nine out of the top ten Canadian exports to Taiwan in that year were either resources or resource-based products.

In sharp contrast to the commodity distribution of Canadian exports, labour-intensive manufactured products such as textiles, clothing and leather products, machinery and transportation equipment, and light consumer goods dominate Canadian imports from the Asian NICs.[10] The share of these products in Canadian imports from South Korea and Taiwan was over 85 per cent in 1987 (see Table 24).

Unlike the Canadian trade performance in Japan, the Canadian share of the Asian NICs' imports steadily increased from 0.7 per cent in 1971 to 1.2 per cent in 1989, largely due to the rise in the Canadian share of the Asian NICs' resource and resource-based imports. For example, the Canadian share of Asian NICs' imports of agricultural products increased from 1.7 per cent in 1971 to 3.1 per cent in 1989. On the other hand, the share of machinery and transportation equipment imports, a large and rapidly growing component of

the Asian NICs' imports, declined from a meagre 0.6 per cent in 1971 to 0.5 per cent in 1989, compared to the Japanese and the U.S. shares of 36 per cent and 23 per cent, respectively (see Table 28, and Table B-4 in Appendix B).

In summary, the importance of the Asian NICs to Canadian trade has substantially increased in the last two decades. Resource-related products dominate Canadian exports to these countries. In return, Canada imports mainly labour-intensive and light manufactured products, and machinery and transportation equipment. Thanks to the increased exports of resource-related products (and also chemical and related products), Canada almost doubled its share of the Asian NIC market during the 1971-89 period.

But maintaining this performance will require that Canadian exporters face the same issue as they must deal with in relation to the Japanese market. Technology-intensive imports have been growing rapidly in importance in total Asian NICs' imports so that future expansion of the Canadian presence in this market will crucially depend upon Canada's ability to broaden its manufactured-exports base and increase its share of machinery and transportation equipment imports. And as always, Canada will face increased competition from China and the Asean countries in supplying resources and resource-based products.

Canada and the Asean Countries

Canada's trade with the Asean countries (Malaysia, Indonesia, Thailand, and the Philippines) is still very small, compared with Japan and the Asian NICs. For example, the share of the Asean countries in total Canadian exports was only 0.8 per cent in 1989, although this was double the share in 1971 (see Table 20). The small importance of the Asean countries may be attributable to their relatively sluggish economic growth during the 1971-89 period. Nevertheless, the share of the Asean countries in Canadian imports rose from 0.2 per cent in 1981 to 0.9 per cent in 1989 (see Table 20). The strong surge in Canadian final domestic demand in combination with these countries' improved competitive position in labour-intensive and light manufactured goods could explain the sharp increase in their share.

Indonesia (40 per cent) and Malaysia (30 per cent) accounted for about 70 per cent of Canadian exports to the Asean countries in 1987.[11] Agricultural products (54.4 per cent), machinery and transportation equipment (18.9 per cent), and chemicals and related products (14.5 per cent) have dominated Canadian exports to Indonesia. Similarly, the contribution of agricultural products to Canadian exports to the other Asean countries was very large, ranging from 25 per cent in Malaysia to 52 per cent in the Philippines. On the other hand, the contribution of machinery and equipment exports was

Table 28

Canadian share of Asian NICs' exports and imports by major commodity group, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Commodity group						
Mineral fuels, lubricants, and related materials	0.0	0.0	0.2	0.0	0.6	2.6
Agricultural, forestry, and fish products	2.0	1.8	1.4	1.7	2.4	3.1
Resource-intensive manufactured products	3.9	1.8	2.4	1.5	1.8	2.4
Labour-intensive manufactured products	4.0	2.9	3.1	0.1	0.6	0.3
Chemicals and related products	0.6	0.6	0.8	0.9	2.0	2.0
Machinery and transportation equipment	1.6	2.0	2.5	0.6	0.5	0.5
Miscellaneous manufactured products	3.1	2.8	3.0	0.2	0.3	0.3
Total	2.9	2.1	2.5	0.7	1.0	1.2

Source Estimates by the author, based on the World Trade Data Bank.

relatively small, ranging from a low of 5.9 per cent in the Philippines to a high of 13.8 per cent in Thailand (see Table 23).

Agricultural, forestry, and fish products, and labour-intensive manufactured products accounted for about 75 per cent of total Canadian imports from the Asean countries in 1987 – ranging from about 69 per cent in Malaysia to about 83 per cent in Thailand (see Table 24). On the other hand, the share of technology-intensive products in Canadian imports from these countries was very small (less than 5 per cent) in all the Asean countries (except Malaysia). Machinery and transportation equipment imports accounted for about 20 per cent of total Canadian imports from Malaysia in 1987, compared to about 33 per cent from South Korea.

The large contribution of labour-intensive and light manufactured products to these countries' exports to Canada, and the correspondingly small share of technology-intensive products, are not surprising given their large and growing comparative advantage in such products as revealed by their trade flows. For instance, the export/import ratio for labour-intensive manufactured products increased from 0.8 per cent in 1971 to over 2.5 per cent in 1989. Similarly, the export/import ratio for light (miscellaneous) manufactured products increased from 0.22 in 1971 to 1.27 in 1989 (see Table B-7, Appendix B). The export/import ratio for technology-intensive products is still considerably less than one in these countries, but it has improved substantially during the last 15 years or so. For example, the export/import ratio for machinery and transportation equipment increased from a dismal 0.02 in 1971 to 0.49 in 1989. These positive developments in the comparative advantage position of the Asean countries suggest that their shares of labour-intensive and light manufactured products in world trade will increase significantly in the future.

Imports from Canada accounted for only 1.7 per cent of total Asean countries' imports in 1989, compared to 1.3 per cent in 1971. The increase in the Canadian share resulted from the large increases in the Canadian shares of agricultural, forestry, and fish products, and chemicals and related products. For instance, Canada's share of Asean agricultural products increased from 3.1 per cent in 1971 to 7.4 per cent in 1989 (see Table 29).

The Canadian share of machinery and transportation equipment imports of the Asean countries is very small and lost substantial ground between 1971 and 1989, declining from 1.3 per cent in 1971 to 0.6 per cent in 1989, compared to the Japanese and U.S. shares in 1989 of 39 and 21 per cent, respectively (see Table 29, and Table B-10, Appendix B). Our analysis suggests that without the dramatic increase in the Canadian shares of agricultural products and chemicals and related products, the marked shifts in the commodity composition of the Asean countries' imports towards the high-technology products and the large reduction in the Canadian share of these imports would

Table 29

Canadian share of the resource-rich (group 2) Asia Pacific Rim countries' exports and imports by major commodity group, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
			(Per cent)			
Commodity group						
Mineral fuels, lubricants, and related materials	0.0	0.0	0.0	0.0	0.0	1.3
Agricultural, forestry, and fish products	0.5	0.7	1.4	3.1	2.3	7.4
Resource-intensive manufactured products	4.4	0.4	0.7	2.1	2.3	2.5
Labour-intensive manufactured products	1.8	1.4	2.4	0.1	1.2	0.4
Chemicals and related products	0.3	0.2	0.3	0.6	0.8	2.9
Machinery and transportation equipment	0.0	0.2	2.1	1.3	0.6	0.6
Miscellaneous manufactured products	0.2	1.6	2.0	0.3	0.5	0.3
Total	0.9	0.4	1.3	1.3	0.9	1.7

Source Estimates by the author, based on the World Trade Data Bank.

have reduced Canada's aggregate share of imports to 0.5 per cent in 1989, compared to the actual share of 1.7 per cent.

In short, once again, Canada's future export performance in these markets will depend critically on the ability of Canadian firms to broaden their manufactured-exports base and increase their share of the machinery and transportation equipment imports of the Asean countries, because the share of these products in Asean imports has been growing very rapidly.

Canada and China

Canadian exports to China increased from just about US$0.22 billion in 1971 to about US$0.86 billion in 1981 and around US$2.0 billion in 1989. However, the Chinese share of total Canadian exports declined from around 1.3 per cent in 1981 to 0.8 per cent in 1989. On the other hand, the importance of China in total Canadian imports increased substantially during the last 20 years as its share moved from a meagre 0.1 per cent in 1971 to 0.3 per cent in 1981 and 1.0 per cent in 1989 (see Table 20).

Over 90 per cent of Canadian exports to China in 1987 were accounted for by agricultural, forestry, and fish products (68 per cent), and chemicals and related products (16 per cent; see Table 23). Imports of labour-intensive and light manufactured products accounted for over 75 per cent of all Canadian imports from China in 1987 (see Table 24). The chief items of import were: textiles; clothing; vegetables, roots and tubers, prepared or crushed; crustaceans and molluscs; and travel goods. These goods represented about 60 per cent of total Chinese exports to Canada.

Although Canadian exports to China have increased substantially, our share of total Chinese imports steadily declined from 13 per cent in 1971 to 5.7 per cent in 1981 and 2.3 per cent in 1989. The large fall in the Canadian share of Chinese imports of agricultural products – from 59.8 per cent in 1971 to 14.0 per cent in 1989, and the failure of Canada to significantly increase its market share of the Chinese manufactured imports (especially machinery and transportation equipment) largely explain the fall in the Canadian share of the Chinese market during this period (see Table 30). The marked increase in the U.S. share of Chinese agricultural imports between 1971 and 1981, largely spurred by the start of diplomatic and trade relations between the two countries, could partially account for the fall in the Canadian share of these products (see Table B-13, Appendix B).

Moreover, the share of agricultural products in total Chinese imports declined substantially during the period 1981-87 – from over 23 per cent in 1981 to about 8 per cent in 1989. On the other hand, the share of machinery and

Table 30

Canadian share of Chinese exports and imports by major commodity group, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Commodity group						
Mineral fuels, lubricants, and related materials	0.0	0.0	0.1	0.0	0.0	2.7
Agricultural, forestry, and fish products	0.6	1.1	1.4	59.8	19.7	14.0
Resource-intensive manufactured products	0.3	0.6	1.7	0.6	2.4	1.2
Labour-intensive manufactured products	2.6	1.7	1.7	1.6	0.4	0.5
Chemicals and related products	0.5	0.4	0.8	0.0	4.5	3.6
Machinery and transportation equipment	0.0	0.3	1.5	0.2	0.4	1.0
Miscellaneous manufactured products	1.0	0.4	2.4	0.0	1.1	0.2
Total	1.1	0.9	1.6	13.0	5.7	2.3

Source Estimates by the author, based on the World Trade Data Bank.

transportation equipment imports increased from around 23 per cent in 1981 to over 36 per cent in 1989. But, the Canadian share of Chinese machinery and equipment imports was only 1.0 per cent in 1989. Our analysis suggests that the shifts in the commodity composition of Chinese imports towards high-tech products accounted for about 40 per cent of the fall in the aggregate Canadian share of Chinese imports between 1971 and 1989.

These trends in turn suggest that the Canadian prospects for exploiting the huge market potential in China and increasing or maintaining its current share of that market will crucially depend on two main factors: 1) Canada's ability to significantly increase its share of Chinese imports of machinery and transportation equipment, whose importance has been growing dramatically; and 2) its capacity to overcome the competitive challenge from the United States, Australia, New Zealand, and the Asean countries in agricultural products and recover some of its lost market share of these imports.

Foreign Direct Investment Linkages

So far we have examined the trade linkages between Canada and the Asia Pacific Rim countries. In this subsection we will examine the investment linkages between Canada and the Asia Pacific Rim countries, in relation to the linkages among the Asian countries, and discuss their relationship to trade flows.

Multinational corporations play an important role in the world economy via their investment, production, and trade activities worldwide. For example, it is estimated that the largest 600 transnational corporations account for between one fifth and one fourth of the world market economies' GDP (see UNCTC [1988]). Their importance as exporters and importers is even greater – between 80 to 90 per cent of Canadian and U.S. exports of goods and services is associated with the activities of multinationals (see Rugman [1988]). Foreign direct investment is undoubtedly the most important manifestation of this transnationalization. For instance, the total stock of world foreign direct investment increased from US$67 billion in 1960 to over US$693 billion in 1985. More importantly, the ratio of the outward foreign direct investment stock of the developed market economies to their GDP significantly increased in the 1980s, from 6.7 per cent in 1980 to 8.0 per cent in 1985 (see UNCTC [1988]).

The increased role of foreign direct investment in the world economy is attributable to several important factors: 1) the increased importance of nontariff barriers (actual as well as potential) in world trade; 2) the growing investment-savings imbalances (the trade gap) in the industrialized countries; 3) increased globalization of the world economy – i.e., the growing economic

interdependence among nations and the associated rise in the competitive pressure on domestic firms to search for productivity-enhancing and cost-cutting sources and methods of production (see Caves [1982], Dunning [1981], and Ray [1989]); and 4) a significant relaxation of the restrictions on foreign direct investment flows and foreign exchange transactions in the industrialized countries as well as in many of the developing countries (see UNCTC [1988]).

Foreign direct investment and joint ventures play an important role in the transfer of technology and management skills, promote competition, and improve the working of markets in the host countries. Thus increased foreign direct investment flows among countries will contribute to the enhancement of productivity and real incomes of host countries, and will therefore expand world output and world trade. Significantly, many of the recent statistical studies that have examined the linkages between foreign direct investment and trade have concluded that international trade and foreign direct investment are complements rather than substitutes, because foreign direct investment substantially increases the two-way trade between subsidiaries and their parent companies (see UNCTC [1988], Rugman [1988], and Ray [1989]).

Investment Flows

Canadian foreign investment stock abroad has risen markedly since the mid-1970s. It increased from C$10.5 billion in 1975 to C$74.7 billion in 1989 (see Table 31b). Investment in services (31 per cent – mainly wholesale and retail trade and banking), and primary industries (23 per cent) accounted for about 54 per cent of the total Canadian direct investment stock abroad in 1986, and the rest was invested in manufacturing industries, similar to the distribution of U.S. foreign direct investment stock (see Table 32). Foreign direct investment in Canada has also expanded significantly in the post-1975 period, but at a considerably slower pace than Canadian investment abroad (see Table 31a). Consequently, the ratio of Canadian outward investment stock to the inward investment stock has increased from 0.28 in 1975 to around 0.62 in 1989.

Much of the increase in Canadian foreign direct investment abroad has been due to increased Canadian participation in the United States. The American share of Canadian foreign direct investment stock rose from about 53 per cent in 1975 to over 70 per cent in 1985. On the other hand, the shares of Western Europe and the other countries (mostly Latin American countries) have declined considerably during this period (see Table 31b).

Improved investment opportunities in the United States in relation to Canada and other countries, growing trade protectionism in America, and the large and rising investment-savings gap in the United States in the 1980s could

Table 31a

Distribution of Canadian foreign *inward* direct investment stock by country/region, selected years

		Distribution by origin				
	Total stock	United States	Western Europe	Japan	South and South East Asia	Others[1]
	(Billions of C$)			(Per cent)		
1970	28.0	80.1	17.7	0.7	0.1	1.4
1975	37.4	79.4	18.3	0.7	0.1	1.5
1980	61.6	79.0	17.8	1.0	0.2	2.0
1985	83.9	75.5	19.4	2.1	0.6	2.4
1989	120.0	–	–	–	–	–

Table 31b

Distribution of Canadian foreign investment stock *abroad* by country/region, selected years

		Distribution by destination				
	Total stock	United States	Western Europe	Japan	South and South East Asia	Others[1]
	(Billions of C$)			(Per cent)		
1970	6.2	52.6	17.3	0.8	1.5	27.8
1975	10.5	52.8	17.8	0.7	2.3	26.4
1980	25.9	63.4	17.0	0.4	4.0	15.2
1985	50.4	70.4	14.6	0.5	3.7	10.8
1989	74.7	–	–	–	–	–

1 Includes Latin America, the Caribbean, Mexico, Australia, New Zealand, and all other countries.

Source Estimates by the author, based on data from UNCTC [1988]; and Organisation for Economic Co-operation and Development, *OECD Economic Outlook* [1991].

explain the rapid expansion of Canadian direct investment in the United States (see Ray [1989]).

As was the case with trade linkages, Canadian investment linkages with the Asia Pacific Rim countries are still weak compared to its relations with the United States and Western Europe. In 1985, the Asia Pacific Rim countries

Table 32

Distribution of *outward* stock of foreign direct investment by sector, selected years

	Primary	Manufacturing	Services
		(Per cent)	
Canada			
1975	21.1	50.5	28.4
1980	30.5	43.6	25.9
1986	22.9	46.2	30.9
Japan			
1975	28.1	32.4	39.5
1980	21.9	34.4	43.7
1986	12.9	26.6	60.5
United States			
1975	26.4	45.0	24.3
1980	24.7	40.5	29.8
1986	22.1	38.8	39.1

Source: Based on data from UNCTC [1988].

accounted for only about 4 per cent of the Canadian foreign direct (outward) investment stock (see Table 31b). Similarly, these countries accounted for less than 3 per cent of the total foreign direct investment stock in Canada. However, their participation in Canada has grown rapidly in the 1980s. For instance, the Japanese share of the total foreign direct investment stock in Canada more than doubled during the 1980-85 period (see Table 31a).

The Canadian share of Japanese total foreign direct investment (outward) stock is also very small, compared to the shares of the United States and the Western European countries. In 1985 Canada accounted for only 1.5 per cent of the total Japanese direct investment stock abroad, compared to the U.S. share of 30.4 per cent. In addition, the Canadian share declined from 5.3 per cent in 1970 to 1.6 per cent in 1975, and more or less remained constant thereafter. In contrast, the U.S. share steadily increased from 19.4 per cent in 1970 [illegible]4 per cent in 1985 (see Table 33b). The Canadian share of the total foreign direct investment stock in Japan has also declined from 8.0 per cent in 1970 to 2.5 per cent in 1985 (see Table 33a).

In the other Asian countries, Canada has increased its investment presence. Canada's share in the total foreign direct investment (inward) stock of the other Asian countries has increased from 1.9 per cent in 1970 to 2.7 per cent in 1985 (see Table 34). But, as mentioned earlier, Indonesia alone accounts

Table 33a

Distribution of Japanese foreign *inward* direct investment stock by country/region, selected years

		Distribution by origin				
	Total stock	United States	Western Europe	Canada	South and South East Asia	Others[1]
	(Billions of US$)			(Per cent)		
1970	0.6	61.7	21.7	8.0	0.0	8.6
1975	1.5	60.0	21.3	5.0	0.7	13.0
1980	3.0	54.0	23.2	3.0	3.0	16.8
1985	7.0	48.6	23.4	2.5	4.1	21.4
1989	12.6	–	–	–	–	–

Table 33b

Distribution of Japanese foreign direct investment stock *abroad* by country/region, selected years

		Distribution by destination				
	Total stock	United States	Western Europe	Canada	South and South East Asia	Others[1]
	(Billions of US$)			(Per cent)		
1970	3.6	19.4	17.8	5.3	22.2	35.3
1975	15.9	21.8	15.1	1.6	27.4	34.1
1980	36.5	24.7	11.7	1.4	27.6	34.6
1985	83.6	30.4	12.9	1.5	23.7	31.5
1989	292.6	–	–	–	–	–

1 Includes Latin America, the Caribbean, Mexico, Australia, New Zealand, and all other countries.

Source Estimates by the author, based on data from UNCTC [1988]; and Organisation for Economic Co-operation and Development, *OECD Economic Outlook* [1991].

for about 50 per cent of the total Canadian direct investment in Asia, implying that the investment linkages between Canada and the Asia Pacific Rim countries are weak.

Total foreign direct investment stock of all countries in Asia (excluding Japan) increased from US$13 billion to almost US$50 billion in 1985. Most

Table 34

Distribution of Asian (excluding Japan) *inward* foreign direct investment stock by country/region, selected years

	Total stock	United States	Japan	Canada	Others[1]
	(Billions of US$)		(Per cent)		
1975	13.0	43.8	33.1	1.9	21.2
1983	40.1	21.2	41.7	3.1	34.0
1985	49.6	30.8	39.9	2.7	26.6

1 Mostly European and the intra-Asian investment (excluding Japan).
Source Estimates by the author, based on data from UNCTC [1988].

of this is in the Asia Pacific Rim countries. Indonesia was the major recipient (about 50 per cent) of the foreign investment into the region (see UNCTC [1988]). Like the trade relationship, investment linkages among the Asia Pacific Rim countries are strong and increasing (see UNCTC [1988]). For instance, Japan accounted for about 40 per cent of the total foreign investment stock in Asia in 1985, compared to 33 per cent in 1975 (see Table 34).

The weak investment linkages between Canada and the Asia Pacific Rim might be both a result and a cause of the poor Canadian trade performance in this region. However, the investment flows between Canada and the Asia Pacific Rim countries have been expanding rapidly during the last three years or so. Canada was the third largest recipient of Korean foreign direct investment in 1989, after the United States and Indonesia (see Investment Canada [1989]). Korean firms have invested in Canada in areas such as pulp mills, coal and uranium mines, specialty steel manufacturing, automobiles and parts, banking and trading (see Investment Canada [1989]). Similarly, investment from Hong Kong has been increasing rapidly (see Statistics Canada, Cat. 67-102, Annual).

In summary, Canadian investment linkages with the United States are large and have increased considerably during the last 15 years or so. In contrast, the investment flows between Canada and the Asia Pacific Rim are fairly small. Japan and the United States are the major players in the Asia Pacific Rim region in terms of trade as well as investment and account for over 70 per cent of the total foreign direct investment in Asia. The recent trends in foreign direct investment and trade flows among the countries strongly suggest that weak Canadian investment links with the Asia Pacific Rim countries have contributed to the poor Canadian trade performance in that region. On the

other hand, the growing investment linkages among the Asia Pacific Rim countries will further increase economic integration among them.[12]

Barriers to Trade and Investment

So far we have analysed the recent trends in trade and investment flows between Canada and the Asia Pacific Rim countries. The objective of this subsection is to assess the role of formal and informal barriers to trade and investment in Canadian commercial relations with the Asian countries.

Formal barriers can be defined as tariffs and nontariff measures that are stated explicitly in official legislation or government mandates. On the other hand, informal barriers are not transparent and are the result either of a conscious effort by government to favour domestic over foreign producers or policies and practices that are rooted in domestic institutions. There is no unambiguous way to identify or measure the impact of these sorts of barriers (see Saxonhouse and Stern [1988]).

Since the mid-1970s, national governments in many countries have resorted to restrictive trade and investment policies to improve their competitive position at home. These measures have been a response to the increasing difficulties faced by import competing sectors in adjusting to changes in long-term comparative advantage and increased international competition. Because of GATT obligations, which "bind" countries to lower tariffs, trade protection has taken the form of various formal and informal nontariff measures. Some of the important types of formal nontariff protection include: qualitative restrictions (import quotas, voluntary export restraints, prohibitions, domestic content and mixing requirements, export limitations, etc.); countervailing and antidumping duties; variable levies; subsidies and other discriminatory government procurement policies; foreign investment policies (screening and monitoring of both inward and/or outward foreign direct investment, performance requirements, etc.); customs procedures and administrative practices; and technical barriers (health and safety standards, packaging and labelling regulations, etc.).

Tariff Barriers

The level and industrial structure of tariff protection in Canada, Japan, and the other Asia Pacific Rim countries is summarized in Tables 35 and 36. The average level of tariff protection is substantially higher in all the Asia Pacific Rim countries (except Hong Kong and Singapore) than in Canada. For instance, the average Post-Tokyo Round tariff rate (weighted by imports) varies from a low of 6.2 per cent in Japan to a high of 31 per cent in Thailand,

Table 35

Post-Tokyo Round (1987) tariffs in Canada and Japan

	Canada	Japan
	(Per cent)	
Traded goods		
Agricultural, forestry, and fish products	2.2	21.8
Food, beverage, and tobacco	6.1	28.5
Textiles	16.7	3.3
Clothing	24.2	13.9
Leather products	6.3	3.1
Footwear	21.9	15.7
Wood products	3.2	0.3
Furniture and fixtures	14.3	5.1
Paper and paper products	6.7	2.9
Printing and publishing	1.0	0.1
Chemicals	7.5	4.8
Petroleum and related products	0.3	2.2
Rubber products	6.7	1.1
Nonmetallic mineral products	6.4	0.5
Glass and glass products	7.2	5.1
Iron and steel	5.4	2.8
Nonferrous metals	3.0	1.1
Metal products	8.5	5.2
Nonelectrical machinery	4.5	4.4
Electrical machinery	5.8	4.3
Transportation equipment	1.6*	1.5
Miscellaneous manufacturing	5.4	4.6
Total traded goods	4.6	5.2

*Includes the Canada-U.S. free trade under the Auto Pact.
Source: Deardorff and Stern [1989].

compared to 4.6 per cent in Canada. In contrast, Hong Kong and Singapore do not provide any tariff protection to their domestic producers.

Average tariffs on manufactured goods are significantly higher than those on primary products in Canada. Moreover, within the manufactured sector, tariffs on labour-intensive manufactured industries such as textiles, clothing, footwear, and furniture and fixtures are substantially higher than on other manufactured products, ranging from an average rate of 14.3 per cent in furniture and fixtures to 24.2 per cent on clothing (see Table 35). As discussed in the third section, the Asia Pacific Rim countries (excluding Japan) have a strong comparative advantage in these industries in relation to Canada and other industrialized countries.

Table 36

Average tariff protection in the Asia Pacific Rim countries

Product group	Singapore	South Korea	Malaysia	Thailand	Philippines
			(Per cent)		
Food	0	28	10	40	35
Agricultural raw materials	0	14	7	24	23
Mineral fuels	2	10	7	7	17
Ores and metals	0	15	7	13	16
Iron and steel and NFM	0	18	8	17	17
Manufacturing	0	24	16	33	29
Chemical products	0	20	20	26	18
Other manufacturing	1	27	21	41	38
Machinery and equipment	0	21	11	23	23
Others	0	5	11	18	39
All sectors	0	23	14	31	28

Source: Kuwahara, Marchese, and Vossenaar [1988].

In contrast to the Canadian industrial tariff structure, Japanese tariffs are highest in the agri-food sector. The average tariff rate in the agricultural, forestry, and fishing products is 21.8 per cent, and in the food, beverage, and tobacco industries is 28.5 per cent. In comparison, the average aggregate tariff rate is 6.2 per cent (see Table 35).

Similarly, tariff protection for the agri-food industries is very high in the other Asia Pacific Rim countries (see Table 36). In these countries, tariff rates on imports of mineral fuels and ores and metals are also fairly large. For instance, the average tariff rate on mineral fuels varies from a low of 7 per cent in Malaysia and Thailand to 17 per cent in the Philippines. As shown earlier, Canada has a strong comparative advantage in natural resources and resource-based products, relative to the Asia Pacific Rim countries, especially Japan and the Asian NICs. These Asian Pacific Rim countries also provide a substantial amount of tariff protection to their manufacturing industries.

Nontariff Barriers

Assessment of the importance of nontariff barriers (NTBs) in the distortions of trade flows requires that they be converted into tariff equivalents. A tariff equivalent of an NTB measures the percentage change in the import price of a commodity that is subject to an NTB by an importing country (see Magun, Rao, and Lodh [1987]). Using the data developed by Deardorff and Stern [1989], we analyse here the role of nontariff measures on trade flows between Canada and Japan. There are no readily available data on nontariff barriers for the other Asia Pacific Rim countries. However, developing countries in the past have relied heavily on tariff protection, because of their large dependence on tariff revenue and the lack of a strong obligation to the GATT to reduce their tariffs.

Canadian nontariff protection is concentrated mainly in the agri-food, textiles and clothing, footwear, electrical machinery, and transportation equipment industries (see Table 37). Agricultural subsidies, meat import laws, marketing boards, provincial liquor board restrictions, and Canadian Wheat Board (CWB) licensing requirements account for a large part of the Canadian nontariff protection in the agri-food industry (see Magun, Rao, and Lodh [1987] and Saxonhouse and Stern [1988]). Quantitative restrictions under the MFA (Multi-Fibre Agreement) appear to be the chief cause of the very high level of nontariff protection (39 per cent) in the textiles and clothing industries in Canada. Canadian footwear quotas, on average, increased the import price of footwear products by close to 13 per cent (see Table 37). Voluntary export restraints in automobiles (especially against Japanese autos) mainly explain the large nontariff protection (11.4 per cent) provided to the Canadian transportation equipment industry. Similarly, voluntary export restraints and antidumping duties on electrical products (mostly from the Asia Pacific Rim countries) explain the 14.4-per-cent nontariff protection in the Canadian electrical machinery industry. For instance, during the 1980-86 period, close to 30 per cent of all the Canadian antidumping (affirmative) actions were against the Asia Pacific Rim countries (see Table 38). It is important to note that Canadian nontariff protection is substantially higher in industries where the Asia Pacific Rim countries have a strong comparative advantage (labour-intensive manufactured products, electrical machinery, and transportation equipment).

As with tariffs, Japan provides an unusually large amount of nontariff protection (close to 80 per cent) to its agri-food industry, where Canada has a strong comparative advantage relative to Japan (see Table 37). Similarly, Japanese nontariff protection is also fairly high in chemicals and related products (17.9 per cent) and petroleum products (17.0 per cent), where Canada has a large comparative advantage.

Table 37

Estimated tariff equivalents of nontariff barriers in Canada and Japan

	Canada	Japan
	(Per cent)	
Traded goods		
Agricultural, forestry, and fish products	6.5	79.7
Food, beverage, and tobacco	25.6	58.1
Textiles	39.0	9.7
Clothing	39.0	4.1
Leather products	0.0	0.0
Footwear	12.8	17.9
Wood products	0.0	0.0
Furniture and fixtures	0.0	0.0
Paper and paper products	0.0	0.0
Printing and publishing	0.0	0.0
Chemicals	0.0	17.9
Petroleum and related products	0.0	17.0
Rubber products	0.0	0.0
Nonmetallic mineral products	0.0	7.5
Glass and glass products	0.0	0.0
Iron and steel	0.0	0.0
Nonferrous metals	0.0	0.0
Metal products	0.0	0.0
Nonelectrical machinery	0.0	0.0
Electrical machinery	14.4	0.0
Transportation equipment	11.4*	0.0
Miscellaneous manufacturing	0.0	10.6
Total traded goods	7.1	21.8

*Includes the Canada-U.S. free trade under the Auto Pact.
Source: Deardorff and Stern [1989].

In summary, both Canadian tariff and nontariff protection is substantially higher in industries where the Asia Pacific Rim countries have a strong and growing comparative advantage. Similarly, the Asia Pacific Rim countries' tariff and nontariff barriers are extremely high in the agri-food, mineral fuels, metals and ores, and petro-chemical industries, where Canada has a strong comparative advantage. Therefore, a gradual removal of tariff and nontariff protection in Canada as well as in the Asia Pacific Rim countries, either under the GATT framework or under bilateral trade enhancement agreements, could increase markedly the two-way trade between Canada and the Asia Pacific Rim countries. Canadian exports of resources and resource-based manufactured products to the Asia Pacific Rim countries, especially to Japan, South Korea, and Taiwan, would likely expand dramatically under freer trade.

Table 38

Number of Canadian antidumping actions against the Asia Pacific Rim countries, 1980-86

	Initiative	Affirmative	Negative	Pending
Japan	16	10	5	1
Hong Kong	3	2	1	0
Singapore	2	2	0	0
South Korea	20	12	7	1
Taiwan	3	1	2	0
Malaysia	1	1	0	0
Thailand	0	0	0	0
Philippines	0	0	0	0
China	8	7	1	0
Asia Pacific Rim countries	53	35	16	2
All countries	230	136	85	8
Developing countries	53	35	14	1

Source: Finger and Olechowski [1988].

Similarly, Canadian exports of manufactured products (machinery and transportation equipment) to the Asean countries and China would also increase a great deal. On the other hand, Canadian imports of labour-intensive and light manufactured goods, electrical machinery, and automobiles from the Asia Pacific Rim countries would increase substantially.

These developments in turn could improve the productivity and real incomes of all the countries concerned, because of the stimulus to enhance productive efficiency. However, the dramatic changes in the industrial structure of exports and output, brought on by freer trade, would also result in considerable labour adjustment difficulties during the transition period in Canada as well as in the Asian countries, in the form of plant closures and job losses and/or job dislocations. Canada could manage these transitional difficulties fairly well by strengthening the existing labour market programs and/or introducing new initiatives for developing labour market skills, and for providing training and retraining to the workers affected by structural changes (see Economic Council of Canada [1988]).

Foreign Investment Restrictions

Unlike barriers to trade, we know very little about impediments to foreign direct investment and their effect on investment and trade flows among

countries. Here, we will briefly examine some of the important barriers to foreign direct investment in Canada and the Asia Pacific Rim countries (especially Japan).

With the creation of Investment Canada in 1984, the political climate associated with foreign investment changed significantly. However, investments and acquisitions in cultural industries are still subject to review and certain types of foreign investments in oil and gas are discouraged in order to foster Canadian ownership. Canada also imposes ownership and asset restrictions on foreign participation in Canadian financial institutions. Canada also does not provide national treatment to foreign-owned investments in a number of activities. Furthermore, Canada also reserves the right to impose domestic performance requirements on foreign investments (see Saxonhouse and Stern [1988]). Nevertheless, the Canada-U.S. Free-Trade Agreement has removed many of these restrictions on U.S. investments in Canada (see Magun et al. [1988]).

As shown in the previous subsection, total foreign investment stock in Japan was a mere US$7 billion in 1985, compared to its foreign investment stock abroad of about US$84 billion in that year. The low ratio of the inward to the outward foreign investment stock has been attributed to the legacy of strict Japanese laws against foreign direct investment during much of the postwar period. But, foreign direct investment had been liberalized in virtually all sectors by 1985 (see Saxonhouse and Stern [1988]). Nevertheless, many observers question the extent and the effectiveness of the changes in the Japanese statutory framework governing foreign direct investment inflows (see Henderson [1986]).

In an effort to encourage and attract foreign direct investment, the other Asia Pacific Rim countries have also significantly liberalized the rules governing foreign direct investment flows in recent years (see UNCTC [1988]). However, investors from North America and Europe still face many problems in setting up business in these countries. For example, there have been many complaints from foreign investors doing business in China about the low productivity levels, the high level of taxation, the bureaucratic red tape, the inadequate infrastructure, and, most importantly, the lack of foreign exchange to buy machinery and equipment (see Zhang and Huenemann [1987]).

Conclusions

This paper has examined trade and investment performance of the Asia Pacific Rim countries in the last two decades. It has also evaluated the competitive position of Canada in these markets vis-à-vis its major competitors.

The importance of the Asia Pacific Rim market to Canadian exports increased over the past 20 years with the share of the Asia Pacific Rim countries in total Canadian exports rising from 6.7 per cent in 1971 to 10.4 per cent in 1989. But, the penetration of imports from the Asia Pacific Rim countries into Canada was even more dramatic. The share of these countries in total Canadian imports increased from about 7.1 per cent in 1971 to almost 15.0 per cent in 1989.

Resources and resource-based manufactured products account for close to 50 per cent of all Canadian exports to the Asia Pacific Rim countries. In contrast, the share of nonresource-based manufactured products, mostly technology-intensive products, in total Canadian imports from these countries is around 80 per cent.

The concern for Canada is that the importance of resources and resource-based products in the total imports of the Asia Pacific Rim countries is declining steadily. Hence, the longer-term prospects for exploiting the enormous export potential of the Asia Pacific Rim market depend on Canada's ability to diversify its manufactured exports base. In particular, Canada needs to significantly increase its share of these countries' imports of technology-intensive products. To achieve this goal, Canada must substantially improve its productivity and cost performance in the high-tech industries (machinery and transportation equipment, and chemicals and related products) in relation to the United States, Japan, the European countries, and the Asian NICs. In addition, Canada faces a strong competitive challenge from the United States, Australia, New Zealand, the Asean countries, and China in agricultural and resource-based products, and must maintain or improve its share of the demand for these products in the Asia Pacific Rim. If these challenges are not successfully met, the Canadian share of the Asia Pacific Rim market could decline further.[13] Nevertheless, the *volume* of Canadian exports to these countries will continue to increase because of the rapid expansion of their economies and the associated imports demand.[14]

As with trade, Canadian investment linkages with the Asia Pacific Rim countries are weak. In contrast, the trade and investment linkages among the Asia Pacific Rim countries, and their commercial relations with the United States, are very strong. The weak investment linkages between Canada and the Asia Pacific Rim countries might be an important cause of the weak Canadian trade performance in this region.

In summary, the medium- to longer-term prospects for Canadian living standards (both the absolute and relative positions) crucially depend on Canada's ability to adjust rapidly to increased global competition and to changes in the commodity composition of world exports (see Economic Council of Canada [1992]). This means restructuring its industry and moving up

the value-added ladder. These changes would enable Canada to improve its relative productivity and cost performance, help to improve its trade performance in the Asia Pacific Rim market, and enable it to overcome the growing competitive challenge from the Asia Pacific Rim countries and other countries at home and in third-country markets. Improvements in competitive position are also crucial for attracting Asian and European investment to Canada rather than to the United States. This is especially true of the automobile industry, because of the North American content provisions of the Canada-U.S. Free-Trade Agreement (see Magun et al. [1988]).

Appendix A

World Trade Data Base

The World Trade Data Base, constructed by the International Trade Division of Statistics Canada, provides a complete matrix of international trade flows (both exports and imports of goods) for about 170 countries, disaggregated by approximately 800 commodities. These data are annual and cover the period 1971-89. The original source of this data base is the trade data reported to the United Nations Statistical Office by member countries.

Statistics Canada made several adjustments to the original data in order to correct some of the important shortcomings of the U.N. data. For example, not all countries value their imports and exports in the same way; some value imports c.i.f. (cost, insurance, and freight) and others use f.o.b. (free on board) measurements. Some countries define their territory as within their political boundaries while others use customs boundaries. Trade with entrepôt ports is another source of difficulty with the U.N. data.

Some of the important improvements that Statistics Canada made to the original U.N. trade data include:

- standardization of the measure of a market. It is always based on imports, although its breakdown can come from counterpart exports;

- reallocation of exports assigned to entrepôt ports to the countries they serve by reference to those countries' import statistics;

- further standardization of the use of the commodity classification;

- creation of geographic groupings for which trade is comparable in cases where reporting countries group individual partner countries differently;

- imputation of late or nonreporting countries from data reported by counterpart trading partners; and

- balancing of world trade totals by reference to U.N. publications on country import and export totals.

For purposes of analytical convenience and manageability of the study, we have aggregated the World Trade Data Base from about 170 countries to 14 countries/regions: Canada, United States, the EEC, Japan, the Asian NICs (Hong Kong, Singapore, South Korea, and Taiwan), the other Asia Pacific Rim countries (Malaysia, Indonesia, Thailand, and the Philippines), China,

and the rest of the world (ROW). For all these 14 countries/regions, the trade flows are aggregated from about 800 commodities into seven major commodity groups: 1) mineral fuels, lubricants, and related materials; 2) agricultural, forestry, and fish (unprocessed) products; 3) resource-intensive manufactured products; 4) labour-intensive manufactured products; 5) chemicals and related products; 6) machinery and transportation equipment; and 7) miscellaneous manufactured products. The commodity aggregation parameters are given in the Appendix. It should be pointed out that we have excluded the SITC group "Commodities and Transactions Not Classified Elsewhere" (i.e., section 9 commodities as given in the *Standard International Trade Classification Revision 2*) from our analysis, because these transactions do not fit into either primary or manufactured trade categories. They accounted for about 2 per cent of total world trade in 1987.

The sum of the first two commodity groups gives the trade flows of primary goods and the sum of the remaining five commodity groups gives the trade flows of manufactured products. Trade in chemicals and related products, and machinery and transportation equipment is commonly referred to as high-tech (technology-intensive) trade. Trade classified under miscellaneous manufactured products is often termed trade in light manufactured goods.

Table A-1

Standard International Trade Classification (Revision 2)

Group	Commodity name	SITC
1	Mineral fuels, lubricants, and related materials	
	Metalliferous ores and metal scrap	28
	Coal, coke, and briquettes	32
	Petroleum, petroleum products, and related materials	33
	Gas, natural and manufactured	34
	Electric current	35
2	Agricultural, forestry, and fish products	
	Live animals chiefly for food	00
	Meat and meat preparations	01
	Dairy products and birds' eggs	02
	Fish, crustaceans and molluscs, and preparations thereof	03
	Cereals and cereal preparations	04
	Vegetables and fruits	05
	Sugar, sugar preparations, and honey	06
	Coffee, tea, cocoa, spices, and manufactures thereof	07
	Feeding stuff for animals (not including unmilled cereals)	08
	Miscellaneous edible products and preparations	09
	Hides, skins, and furskins, raw	21
	Oil seeds and oleaginous fruits	22
	Crude rubber (including synthetic and reclaimed)	23
	Cork and wood	24
	Pulp and waste paper	25
	Crude fertilizers and crude minerals (excluding coal, petroleum, and precious stones)	27
	Crude animal and vegetable materials, n.e.s.	29
3	Resource-intensive manufactured products	
	Cork and wood manufactures (excluding furniture)	63
	Paper, paperboard, and articles of paper pulp, of paper, or of paperboard	64
	Nonmetallic mineral manufactures, n.e.s.	66
	Iron and steel	67
	Nonferrous metal	68
	Manufactures of metal, n.e.s.	69
4	Labour-intensive manufactured products	
	Textile fibres (other than wool tops) and their wastes (not manufactured into yarn or fabric)	26
	Animal oils and fats	41
	Fixed vegetable oils and fats	42
	Animal and vegetable oils fats, processed, and waxes of animal or vegetable origin	43
	Leather, leather manufactures, n.e.s., and dressed furskins	61

Table A-1 (cont'd.)

Group	Commodity name	SITC
	Rubber manufactures, n.e.s.	62
	Textile yarn, fabrics, made-up articles, n.e.s., and related products	65
	Articles of apparel and clothing accessories	84
	Footwear	85
5	Chemicals and related products	
	Organic chemicals	51
	Inorganic chemicals	52
	Dyeing, tanning, and colouring materials	53
	Medicinal and pharmaceutical products	54
	Essential oils and perfume materials; toilet, polishing, and cleansing preparations	55
	Fertilizers, manufactured	56
	Artificial resins and plastic materials, and cellulose esters and ethers	58
	Chemical materials and products, n.e.s.	59
6	Machinery and transportation equipment	
	Power generating machinery and equipment	71
	Machinery specialized for particular industries	72
	Metalworking machinery	73
	General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	74
	Office machines and automatic data processing equipment	75
	Telecommunications and sound recording and reproducing apparatus and equipment	76
	Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including nonelectrical counter parts, n.e.s., of electrical household type equipment)	77
	Road vehicles (including air-cushion vehicles)	78
	Other transport equipment	79
7	Miscellaneous manufactured products	
	Beverages	11
	Tobacco and tobacco manufactures	12
	Sanitary, plumbing, heating, and lighting fixtures and fittings	81
	Furniture and parts thereof	82
	Travel goods, handbags, and similar containers	83
	Professional, scientific, and controlling instruments and apparatus, n.e.s.	87
	Photographic apparatus, equipment and supplies, and optical goods, n.e.s.; watches and clocks	88
	Miscellaneous manufactured articles, n.e.s.	89

Source: Standard International Trade Classification Revision 2, United Nations, New York, 1975.

Appendix B

Table B-1

Export/import ratios and trade balance of Japanese trade by major commodity group, selected years

	Export/import ratios			Trade balance		
	1971	1981	1989	1971	1981	1989
	(Per cent)			(Billions of US$)		
Commodity group						
Mineral fuels, lubricants, and related materials	0.02	0.01	0.03	-3.1	-60.8	-48.6
Agricultural, forestry, and fish products	0.12	0.08	0.06	-6.1	-28.1	-40.9
Resource-intensive manufactured products	4.35	3.56	1.09	4.1	19.1	2.1
Labour-intensive manufactured products	2.33	1.45	0.54	1.9	3.1	-9.1
Chemicals and related products	1.62	1.15	1.02	0.6	0.9	0.3
Machinery and transportation equipment	5.17	10.70	6.62	8.5	86.6	158.9
Miscellaneous manufactured products	3.19	3.12	1.47	1.6	9.8	8.2
Total	1.46	1.24	1.36	7.6	30.5	70.8

Source: Estimates by the author, based on the World Trade Data Bank.

Table B-2

Regional distribution of Japanese total exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Canada	3.5	2.2	2.7	5.4	3.5	3.8
United States	32.3	25.7	34.5	27.8	19.7	23.0
EEC	10.9	12.9	17.2	9.4	5.8	12.4
Asia Pacific Rim countries	22.8	24.4	28.3	16.5	25.1	31.2
Asian NICs	13.5	14.3	19.1	5.2	7.2	15.2
Other Asia Pacific Rim countries	6.8	6.8	6.1	9.3	13.7	10.4
China	2.5	3.3	3.1	2.0	4.2	5.6
Rest of the world	30.4	34.8	17.3	40.8	45.9	29.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Estimates by the author, based on the World Trade Data Bank.

Table B-3

Regional distribution of Japanese imports by major commodity group, 1969

	Commodity group							
	1	2	3	4	5	6	7	Total
	(Per cent)							
Canada	4.4	9.3	2.6	0.2	2.4	0.6	0.5	3.8
United States	5.7	31.4	14.2	8.2	35.2	43.1	38.2	23.0
EEC	0.7	5.2	10.5	14.7	31.3	27.5	24.4	12.4
Asia Pacific Rim countries	26.6	32.9	31.0	62.1	14.6	23.7	30.0	31.2
Asian NICs	4.1	11.9	17.5	37.9	7.8	19.9	23.8	15.1
Other Asia Pacific Rim countries	18.1	14.6	10.8	4.4	2.2	2.8	3.0	10.4
China	4.5	6.4	2.7	19.8	4.7	1.1	3.2	5.6
Rest of the world	62.6	21.1	41.7	14.7	16.4	5.1	6.9	29.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Estimates by the author, based on the World Trade Data Bank.

Table B-4

Regional distribution of Asian NICs' imports by major commodity group, 1989

	Commodity group							
	1	2	3	4	5	6	7	Total
	(Per cent)							
Canada	2.6	3.1	2.4	0.3	2.0	0.5	0.3	1.2
United States	10.0	30.7	9.9	5.4	25.4	22.6	17.0	18.1
EEC	1.2	5.2	12.3	8.3	17.3	11.8	12.6	10.4
Asia Pacific Rim countries	27.2	43.9	54.2	73.1	45.5	61.6	62.3	56.5
Japan	3.5	5.2	30.6	11.1	25.6	36.1	21.8	23.8
Asian NICs	7.4	8.7	10.2	23.1	12.1	13.8	13.6	13.3
Other Asia Pacific Rim countries	11.3	17.8	6.8	5.9	2.4	5.7	3.5	7.0
China	4.9	12.2	6.6	38.0	5.3	6.1	23.3	12.5
Rest of the world	59.0	17.1	21.2	7.9	9.8	3.5	7.7	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source Estimates by the author, based on the World Trade Data Bank.

Table B-5

Export/import ratios and trade balance of the Asian NICs' trade by major commodity group, selected years

	Export/import ratios			Trade balance		
	1971	1981	1989	1971	1981	1989
	(Per cent)			(Billions of US$)		
Commodity group						
Mineral fuels, lubricants, and related materials	0.25	0.31	0.42	–1.42	–16.24	–11.89
Agricultural, forestry, and fish products	0.61	0.55	0.61	–0.83	–6.16	–7.73
Resource-intensive manufactured products	0.59	0.96	0.84	–0.53	–0.41	–3.92
Labour-intensive manufactured products	1.50	2.52	2.15	0.91	15.03	31.54
Chemicals and related products	0.30	0.37	0.53	–0.54	–4.45	–9.35
Machinery and transportation equipment	0.37	0.84	1.07	–1.68	–3.95	5.75
Miscellaneous manufactured products	1.37	1.91	1.67	0.30	6.27	15.44
Total	0.67	0.90	1.09	–3.81	–9.93	19.83

Source: Estimates by the author, based on the World Trade Data Bank.

Table B-6

Regional distribution of Asian NICs' exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Canada	2.9	2.1	2.5	0.7	1.0	1.2
United States	34.3	27.4	31.9	15.7	17.5	18.1
EEC	16.0	14.3	13.5	12.2	9.1	10.4
Asia Pacific Rim countries	30.5	32.5	39.9	47.5	49.4	56.5
Japan	11.4	10.6	12.7	28.5	26.4	23.8
Asian NICs	8.8	10.3	12.2	5.7	9.3	13.3
Other Asia Pacific Rim countries	10.0	9.1	6.7	7.2	7.4	7.0
China	0.3	2.5	8.3	6.1	6.3	12.5
Rest of the world	16.4	23.8	12.2	23.8	23.1	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Estimates by the author, based on the World Trade Data Bank.

Table B-7

Export/import ratios and trade balance of the resource-rich (other) Asia Pacific Rim countries by major commodity group, selected years

	Export/import ratios			Trade balance		
	1971	1981	1989	1971	1981	1989
	(Per cent)			(Billions of US$)		
Commodity group						
Mineral fuels, lubricants, and related materials	1.69	2.55	3.97	0.32	13.17	10.47
Agricultural, forestry, and fish products	4.17	3.10	4.02	2.27	9.65	13.18
Resource-intensive manufactured products	0.60	0.55	0.90	–0.34	–2.59	–0.77
Labour-intensive manufactured products	0.79	1.81	2.52	–0.11	2.10	6.14
Chemicals and related products	0.05	0.05	0.20	–0.53	–5.16	–5.60
Machinery and transportation equipment	0.02	0.16	0.49	–1.90	–11.80	–13.40
Miscellaneous manufactured products	0.22	0.48	1.27	–0.23	–0.98	0.89
Total	0.90	1.10	1.19	–0.53	4.40	10.93

Source: Estimates by the author, based on the World Trade Data Bank.

Table B-8

Regional distribution of the resource-rich (other) Asia Pacific Rim countries' exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Canada	0.9	0.4	1.3	1.3	0.9	1.7
United States	20.4	18.8	23.9	14.8	15.0	16.4
EEC	15.9	11.9	13.5	19.4	11.8	11.9
Asia Pacific Rim countries	51.9	55.6	55.1	50.8	49.6	59.5
Japan	32.2	36.4	30.3	31.2	25.0	28.7
Asian NICs	16.8	15.1	22.2	14.3	18.2	27.6
Other Asia Pacific Rim countries	2.5	3.2	1.8	3.5	3.4	2.2
China	0.4	0.9	0.8	1.8	3.0	1.0
Rest of the world	8.8	13.5	6.2	13.2	22.6	10.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Estimates by the author, based on the World Trade Data Bank.

Table B-9

Regional distribution of machinery and transportation equipment of the resource-rich (other) Asia Pacific Rim countries' imports, selected years

	Regional distribution		
	1971	1981	1989
	(Per cent)		
Canada	1.3	0.6	0.6
United States	18.7	16.3	21.4
EEC	28.6	19.4	12.1
Asia Pacific Rim countries	45.3	58.9	61.7
Japan	36.3	41.9	38.6
Asian NICs	8.2	15.8	22.4
Other Asia Pacific Rim countries	0.4	0.5	0.4
China	0.4	0.7	0.3
Rest of the world	6.0	4.9	4.2
Total	100.0	100.0	100.0

Source: Estimates by the author, based on the World Trade Data Bank.

Table B-10

Regional distribution of the resource-rich (other) Asia Pacific Rim countries' imports by major commodity group, 1989

	Commodity group							
	1	2	3	4	5	6	7	Total
	(Per cent)							
Canada	1.3	7.4	2.5	0.4	2.9	0.6	0.3	1.7
United States	4.7	17.4	6.8	13.4	15.2	21.4	17.2	16.4
EEC	2.6	10.4	13.2	3.9	17.7	12.1	15.8	11.9
Asia Pacific Rim countries	64.5	37.9	62.4	72.9	51.5	61.7	58.7	59.5
Japan	2.4	5.5	36.2	14.3	21.4	38.6	24.1	28.7
Asian NICs	56.9	20.4	22.9	50.6	26.4	22.4	33.5	27.6
Other Asia Pacific Rim countries	4.6	7.8	2.6	5.8	2.4	0.4	0.6	2.2
China	0.6	4.2	0.7	2.1	1.2	0.3	0.5	0.9
Rest of the world	26.9	26.8	15.1	9.3	12.7	4.2	8.0	10.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source Estimates by the author, based on the World Trade Data Bank.

Table B-11

Export/import ratios and trade balance of China by major commodity group, selected years

	Export/import ratios			Trade balance		
	1971	1981	1989	1971	1981	1989
	(Per cent)			(Billions of US$)		
Commodity group						
Mineral fuels, lubricants, and related materials	3.16	49.37	2.90	0.0	4.6	2.7
Agricultural, forestry, and fish products	2.51	1.17	2.10	0.5	0.7	3.8
Resource-intensive manufactured products	0.37	0.86	0.62	–0.4	–0.3	–2.3
Labour-intensive manufactured products	3.12	1.49	3.35	0.4	2.0	15.8
Chemicals and related products	0.42	0.65	0.52	–0.2	–0.7	–2.5
Machinery and transportation equipment	0.28	0.18	0.55	–0.2	–3.3	–6.8
Miscellaneous manufactured products	7.13	1.79	3.21	0.1	0.6	8.2
Total	1.19	1.21	1.45	0.3	3.6	19.0

Source: Estimates by the author, based on the World Trade Data Bank.

Table B-12

Regional distribution of Chinese exports and imports, selected years

	Exports			Imports		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Canada	1.1	0.9	1.6	13.0	5.7	2.3
United States	0.3	10.0	21.0	0.0	24.0	14.5
EEC	18.0	12.7	10.0	24.5	10.8	10.3
Asia Pacific Rim countries	54.8	60.8	63.1	37.5	45.5	67.8
Japan	15.9	25.5	18.2	34.8	30.6	19.8
Asian NICs	34.1	29.1	44.0	1.6	12.6	46.6
Other Asia Pacific Rim countries	4.8	6.2	0.9	1.1	2.3	1.3
Rest of the world	25.8	15.6	4.4	25.1	13.9	5.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Estimates by the author, based on the World Trade Data Bank.

Table B-13

Regional distribution of Chinese imports by major commodity group, 1989

	Commodity group							
	1	2	3	4	5	6	7	Total
	(Per cent)							
Canada	2.7	14.0	1.2	0.5	3.6	1.0	0.2	2.3
United States	3.9	43.8	8.3	6.7	22.9	13.0	9.8	14.5
EEC	1.6	8.7	9.5	4.7	9.8	15.9	4.0	10.3
Asia Pacific Rim countries	82.9	23.3	77.4	83.0	59.1	64.7	84.4	67.8
Japan	2.8	1.9	44.7	8.8	14.7	24.3	11.1	19.8
Asian NICs	63.2	20.4	28.9	74.2	43.5	40.4	73.4	46.6
Other Asia Pacific Rim countries	16.9	1.0	3.8	0.0	0.9	0.0	0.0	1.3
Rest of the world	8.8	10.2	3.6	5.1	4.6	5.3	1.5	5.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source Estimates by the author, based on the World Trade Data Bank.

Table B-14

Regional distribution of Chinese imports of machinery and transport equipment and agricultural products, selected years

	Machinery and transport equipment			Agricultural products		
	1971	1981	1989	1971	1981	1989
	(Per cent)					
Canada	0.2	0.4	1.0	59.8	19.7	14.0
United States	0.0	5.9	13.0	0.0	46.7	43.8
EEC	50.8	13.9	15.9	1.7	4.0	8.7
Asia Pacific Rim countries	32.4	74.2	64.7	13.9	12.0	23.3
Japan	32.0	58.7	24.3	2.3	0.6	2.9
Asian NICs	0.4	15.5	40.4	6.4	3.8	20.4
Other Asia Pacific Rim countries	0.0	0.0	0.0	5.2	7.6	1.0
Rest of the world	16.6	5.6	5.3	24.6	17.7	10.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source Estimates by the author, based on the World Trade Data Bank.

Notes

1 Singapore is a member of the Asean countries. But here we have included it in the Asian NICs, because of its advanced economy.

2 The share of merchandise trade in GDP is over 180 per cent for Hong Kong and 270 per cent for Singapore. The overwhelming importance of trade in their economies reflects the major role of transshipments in the activities of these two countries.

3 Our findings for South Korea and Japan are consistent with the conclusions of Szirmai and Pilat [1990] and Hooper and Larin [1989].

4 The dramatic increase in the importance of machinery and equipment exports in total exports of the Asian NICs during the 1971-87 period, and the marked rise in the share of world high-tech exports during this period, reported in Magun and Rao [1989], could be the result of the substantial improvement in the relative productivity and cost performance of these countries in the electrical machinery and equipment industry. For instance, the South Korean industry's productivity increased from about 32 per cent of the U.S. level in 1975 to 63 per cent in 1985 (see Szirmai and Pilat [1990]).

5 These results are in line with the conclusions of Baldwin [1988].

6 The positive contribution of the increase in the share of technology-intensive products and light consumer goods in total Canadian imports on the aggregate share of the Asia Pacific Rim countries was offset, for them, by the negative influence of the reduction in the shares of other products in Canadian imports.

7 Canada has a strong comparative advantage in radioactive and associated materials.

8 However, in relation to the Asia Pacific Rim countries, Canada seems to have a comparative advantage in the following high-tech products: agricultural machinery (excluding tractors), metal working machinery (other than machine tools), aircraft and associated equipment, and nonelectric engines and motors (see Magun and Rao [1989] and Lodh [1989]).

9 The impact of changes in the commodity composition of imports of a trading partner (say Japan) on the aggregate Canadian share of that country's market can be quantified by using the following decomposition exercise:

$$\overset{\bullet}{S}{}^{J}_{C} = \Sigma_{i=1}^{n} \alpha^{J}_{i} \overset{\bullet}{S}{}^{J}_{i} + \Sigma_{i=1}^{n} S^{J}_{i} \overset{\bullet}{\alpha}{}^{J}_{i} \qquad (1)$$

where,

$\dot{S}^J_C$ is the per-cent change in the aggregate Canadian share of Japanese imports;

$\dot{S}^J_i$ is the per-cent change in the Canadian share of Japanese imports of the ith commodity;

α^J_i is the share of the ith commodity in total Japanese imports in the base period;

$\dot{\alpha}^J_i$ is the per-cent change in the share of the ith commodity in total Japanese imports; and

S^J_i is the Canadian share of Japanese imports of the ith commodity in the base period.

The first component of the equation measures the contribution of changes in the Canadian commodity shares of Japanese imports to the change in the aggregate Canadian share. The second component gives the impact of changes in the commodity distribution of Japanese total imports on the aggregate Canadian share.

10 Japan and the Asian NICs have dramatically increased their market shares of world trade in the following commodities between 1971 and 1986: autos and auto parts; machine tools for working metal; rotating electric plant; ADP machines; television receivers; telecommunications equipment; household equipment, electronic or not; valves, tubes, diodes, transistors, microcircuit; photographic cameras and equipment; photographic films, plates, and paper; lenses, prisms, and other official items; and watches and clocks (for details, see Magun and Rao [1989]).

11 Total imports of Indonesia were 5 per cent below that of total Malaysian imports in 1987. Yet, Indonesia accounted for about 40 per cent of total Canadian exports to the Asean countries, compared to only 30 per cent by Malaysia. The large trade propensity between Indonesia and Canada can be attributed to the relatively large Canadian direct investment in Indonesia. For instance, Indonesia accounted for about 50 per cent of the total Canadian direct investment stock in Asia in 1987.

12 Increased investment linkages between any two countries would increase the intra-firm and intra-industry trade between them, and permit both countries to capture more fully product and plant scale economies and improve their productivity and real incomes.

13 The large shifts in the commodity composition of the Asia Pacific Rim countries' imports towards technology-intensive products accounted for over 90 per cent of the fall in the Canadian share of the Asia Pacific Rim market between 1971 and 1989.

14 Canadian exports to the Asia Pacific Rim can be defined as the product of Canadian share of that market and the total imports of these countries:

$$EX_C^{APR} = S_C^{APR} * IM^{APR}. \tag{1}$$

Hence, the per-cent change in total Canadian exports can be expressed as:

$$\dot{EX}_C^{APR} = (\dot{S}_C^{APR} * IM^{APR}) + (S_C^{APR} * \dot{IM}^{APR}). \tag{2}$$

The first component in equation (2) measures the impact of the growth in the Canadian share on Canadian exports to the Asia Pacific Rim countries. The second term gives the contribution of the growth in total imports of the Asia Pacific Rim countries to the growth of Canadian exports to that region.

Therefore, total Canadian exports to the Asia Pacific Rim countries could increase even with a decline in its share of that market. A decline in the market share can lead to a fall in total Canadian exports to that region only if the rate of fall in the market share exceeds the growth in total imports of the Asia Pacific Rim countries.

List of Tables and Figures

Tables

1	Main economic characteristics of the Asia Pacific Rim countries, selected years	5
2	Real per-capita GDP level comparisons, relative to the United States, selected Asian countries, selected years	6
3	Average annual growth rate of population, output, exports and imports in the Asia Pacific Rim countries, selected years	8
4	Market share of the Asia Pacific Rim countries in world exports (current prices), selected years	10
5	Savings and investment rates of the Asia Pacific Rim countries, 1965 and 1987	12
6	Commodity composition of the Asia Pacific Rim countries' exports and imports, selected years	15
7	Commodity composition of Japanese exports and imports, selected years	16
8	Commodity composition of Asian NICs' exports and imports, selected years	17
9	Commodity composition of the resource-rich (other) Asia Pacific Rim countries merchandise exports and imports, selected years	18
10	Commodity composition of Chinese exports and imports, selected years	19
11	Output and productivity comparisons of the Canadian and Asia Pacific Rim manufacturing sectors, 1973-88	21
12a	Relative manufacturing labour productivity levels, Japan and the Asian NICs, selected years	22
12b	Relative hourly compensation of production workers in manufacturing, selected years	22
12c	Relative unit-labour costs levels in manufacturing, selected years	22
13a	Relative hourly compensation of production workers in selected Asian countries, total manufacturing, selected years	24
13b	Relative hourly compensation of production workers, textiles, selected years	24
14a	Relative hourly compensation of production workers in selected Asian countries, apparel and other textile products, selected years	25
14b	Relative hourly compensation of production workers, leather and leather products, selected years	25
15a	Relative hourly compensation of production workers in selected Asian countries, primary metals, selected years	26

15b	Relative hourly compensation of production workers, electrical and electronic equipment, selected years	26
16	Relative hourly compensation of production workers in selected countries, motor vehicles and equipment, selected years	27
17	Technological levels of Asian NICs and Asean countries	28
18	Export/import ratios and trade balance of the Asia Pacific Rim countries by major commodity group, selected years	32
19	Regional distribution of the Asia Pacific Rim countries' exports and imports, selected years	35
20	Regional distribution of Canadian exports and imports, selected years	38
21	Asia Pacific Rim countries' share in Canadian imports, selected years	40
22	Commodity composition of Canadian merchandise exports and imports, selected years	42
23	Commodity composition of Canadian exports to the Asia Pacific Rim countries, 1987	43
24	Commodity composition of Canadian imports from the Asia Pacific Rim countries, 1987	44
25	Export/import ratios and trade balance of Canadian trade with the Asia Pacific Rim countries by major commodity group, selected years	45
26	Canadian trade balance with the Asia Pacific Rim countries, selected years	46
27	Canadian share of Japanese exports and imports by major commodity group, selected years	47
28	Canadian share of Asian NICs' exports and imports by major commodity group, selected years	50
29	Canadian share of the resource-rich (group 2) Asia Pacific Rim countries' exports and imports by major commodity group, selected years	52
30	Canadian share of Chinese exports and imports by major commodity group, selected years	54
31a	Distribution of Canadian foreign *inward* direct investment stock by country/region, selected years	57
31b	Distribution of Canadian foreign investment stock *abroad* by country/region, selected years	57
32	Distribution of *outward* stock of foreign direct investment by sector, selected years	58
33a	Distribution of Japanese foreign *inward* direct investment stock by country/region, selected years	59
33b	Distribution of Japanese foreign direct investment stock *abroad* by country/region, selected years	59
34	Distribution of Asian (excluding Japan) *inward* foreign direct investment stock by country/region, selected years	60
35	Post-Tokyo Round (1987) tariffs in Canada and Japan	62

36 Average tariff protection in the Asia Pacific Rim countries 63
37 Estimated tariff equivalents of nontariff barriers in Canada and Japan 65
38 Number of Canadian antidumping actions against the Asia Pacific Rim countries, 1980-86 66
A-1 Standard International Trade Classification (Revision 2) 73
B-1 Export/import ratios and trade balance of Japanese trade by major commodity group, selected years 76
B-2 Regional distribution of Japanese total exports and imports, selected years 77
B-3 Regional distribution of Japanese imports by major commodity group, 1989 78
B-4 Regional distribution of Asian NICs' imports by major commodity group, 1989 79
B-5 Export/import ratios and trade balance of the Asian NICs' trade by major commodity group, selected years 80
B-6 Regional distribution of Asian NICs' exports and imports, selected years 81
B-7 Export/import ratios and trade balance of the resource-rich (other) Asia Pacific Rim countries by major commodity group, selected years 82
B-8 Regional distribution of the resource-rich (other) Asia Pacific Rim countries' exports and imports, selected years 83
B-9 Regional distribution of machinery and transportation equipment of the resource-rich (other) Asia Pacific Rim countries' imports, selected years 84
B-10 Regional distribution of the resource-rich (other) Asia Pacific Rim countries' imports by major commodity group, 1989 85
B-11 Export/import ratios and trade balance of China by major commodity group, selected years 86
B-12 Regional distribution of Chinese exports and imports, selected years 87
B-13 Regional distribution of Chinese imports by major commodity group, 1989 88
B-14 Regional distribution of Chinese imports of machinery and transport equipment and agricultural products, selected years 89

Figures

1 Market shares of Asia Pacific Rim countries in world exports of goods, 1972 and 1987 9
2 Commodity composition of Asia Pacific Rim countries' imports, 1971 and 1989 33

3 Regional distribution of Asia Pacific Rim countries' imports, 1971 and 1989 36
4 Regional distribution of Canadian exports, 1971 and 1989 37
5 Regional distribution of Canadian imports, 1971 and 1989 39
6 Canadian share of the Asia Pacific Rim countries' imports by major commodity group, 1971 and 1989 41

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